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ABSTRACT

This document is the 15th annual summary of research and development in agricultural education in the United States. Authorized by the American Vocational Association, it is intended to show the direction of research in the field; help researchers researchers of efforts; and promote collaboration among researchers on a of efforts; and promote collaboration among researchers on a regional, national, and global basis. The research and development activities completed during 1988-89 are described in 154 abstracts grouped by state and, within state listings, arranged alphabetically by researcher's last name. The research abstracted was conducted under the auspices of institutions in 31 states. Research in progress is cited separately. ERIC accession numbers for previous national summaries are cited, and the names of national editors of the summaries and their institutions also appear. The abstracts are indexed by researcher and by subject. (CML)

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Summaries of Research and Development Activities in

Agricultural Education

Completed in the United States of America
1988-1989

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SUMMARIES OF RESEARCH AND DEVELOPMENT ACTIVITIES IN AGRICULTURAL EDUCATION

UNITED STATES OF AMERICA
1988-1989

EDITOR - JERRY L. PETERS

Agricultural Education

Purdue University
West Lafayette, IN 47907

January 1990

Authorized and Administered by
the American Vocational Association
Agricultural Education Division Research Committee

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PREFACE

This document is the fifteenth annual **Summaries of Research and Development Activities in Agricultural Education** in the United States. The "Summary of Studies" includes abstracts of completed research projects from September 1, 1988 to August 31, 1989. This is the second time since the publication began that manuscripts have been submitted on disk by a majority of the contributors. Manuscripts sent as hard copies were electronically scanned, so that the entire publication was produced in a desktop publishing environment. It is our hope that this process has improved the appearance and quality of the publication.

A total of 154 research abstracts were submitted. They report on 79 master's papers or theses, 34 doctoral dissertations, and 41 staff studies. Thirty-four institutions from 31 states contributed to this year's Summaries. The abstracts are both author and subject indexed to assist the reader.

The citations of research and development activities in progress are listed alphabetically by state. These citations show the direction of research in agricultural education and may help researchers identify colleagues with similar interests, avoid duplication of efforts, and promote collaboration among researchers on a regional, national and global basis.

This publication is authorized by the Research Committee of the Agricultural Education Division, American Vocational Association (AVA). Additional library or personal copies can be purchased for $11 each from the editor. A limited number of copies will be available.

As editor, I would like to recognize and thank those who assisted with the publication especially Nita Poole for word processing and compiling the manuscripts and Judy Ellenburg for mailing, editing, preparing the index, and managing the account. A special thanks is due to the many contributors who helped make this publication possible.

Jerry L. Peters
Editor

ARIZONA

Burhans, Jay S. (1988). An assessment of manpower and formal education needs in extension in Costa Rica. Master of Science thesis, The University of Arizona, Tucson.

The purpose of this study was to assess the rural Extension manpower needs and the needs for formal education in Extension in Costa Rica. The study utilized a questionnaire to survey all current Extension professionals of the Costa Rican Ministry of Agriculture Extension system to determine their educational qualifications, their education in Extension, their perceptions regarding the minimum educational qualifications needed to enter Extension education at the time of the study and 15 years in the future. The study also sought their perceptions concerning the current and future needs for Extension manpower in Costa Rica.

Findings included: (1) all Extension professionals had at least a secondary level diploma and 55 percent held university level qualifications; (2) formal education was the most reported type of education in Extension; (3) 25 percent of the professionals had neither formal education nor training in Extension; (4) both the minimum formal education qualifications needed by Extension professionals and the levels of education appropriate for formal education in Extension were perceived as shifting upwards during the next fifteen years; and (5) Costa Rican Extension professionals perceived a 33 percent current and a 102 percent future increase in Extension manpower as necessary to meet clientele needs.

Johnson, Timothy L. (1988). Relevance of graduate study programs to international students. Master of Science thesis, The University of Arizona, Tucson.

The purpose of this study was to determine the relevance of the graduate study program to international students who studied agriculture at the University of Arizona. The study was a descriptive survey of the 185 international students enrolled during the spring semester of the 1987-88 academic year.

The results from the 106 respondents (57.3 percent) representing 51 countries indicated the following: They had a concern for careers not being met in their home countries; they had a high opinion of the University of Arizona academic community; they were satisfied with their graduate study programs; and they thought course work could be used to solve practical problems. However, they wanted academic advisors to encourage graduate research related to the needs of their home countries and they wanted more off-campus educational activities.

It was recommended that the academic advisors thoroughly assess the home country needs of international students when selecting a research topic and that the College of Agriculture develop a better program of off-campus educational activities in order to give international students a broader perspective of American agriculture.

Schewel, Heidi M. (1989). Employment of Navajos on the Navajo Nation in Arizona as influenced by instruction in vocational agriculture. Master of Science thesis, The University of Arizona, Tucson.

The purpose of this study was to compare employment rates of vocational agriculture program completers from Chinle High School in Arizona with employment rates of non-Hispanic Native Americans residing in the same area and of comparable age. In addition, program completers' perceptions of the competencies taught and the value of the vocational agriculture program at Chinle High School were ascertained.

The study utilized an interview question schedule to determine the employment rates of vocational agriculture program completers from Chinle High School, which were compared to employment data obtained from the Arizona Department of Economic Security Research Administration. The study also sought program completers' perceptions of the Chinle High School Vocational Agriculture Program, and their utilization of Core Curriculum Competencies included in the program's curriculum.

Results indicated vocational agriculture program completers from Chinle High School had higher employment rates than the comparison group. Program completers were employed in a variety of occupations, the highest frequency working in production agriculture enterprises.

Program completers were using many Core Curriculum Competencies taught in the vocational agriculture program. The competencies were used in primary vocations, avocations, or both.

Program completers placed a high value on their experience while enrolled in the vocational agriculture program at Chinle High School. The program was given high ratings by participants. One hundred percent of the program completers responded that if they "had it all to do over again" and re-enroll at Chinle High School, they would re-enroll in the vocational agriculture program.

Keefer, B. R. (1989). Occupational and educational status of completers of Colorado secondary vocational agriculture programs--a five-year follow-up. (State-wide Study). Colorado State University, Fort Collins.

The primary purposes of this study included determining the percentage of completers of secondary vocational agriculture programs in Colorado, over the last five years, who were employed in the agriculture industry. The level of employment, full-time or part-time, and the occupational area within the agriculture industry in which the students were employed were also determined. The final purpose of this study was to determine the percent of completers who were currently enrolled in post-secondary agriculture education, and identify the type of institution they were enrolled in.

The target population consisted of the seventy-nine secondary vocational agriculture programs in the state of Colorado. Each school was sent a survey containing the names of students who were identified through state system reports as completers from 1984 through 1988. The results of the study were based upon a response rate of 68.4 percent.

The findings of this study were as follows: (1) Sixty-three percent of the completers were reported as currently employed in agriculture; (2) the percent of completers employed on a full-time basis in agriculture increased in direct proportion to the number of years past completion of the secondary vocational agriculture program with a five-year average of 63.4 percent full-time employment; (3) the vast majority of completers working in the agriculture industry were employed in the area of production agriculture, 65.6 percent; (4) twenty-nine percent of the completers were currently enrolled in a post-secondary agriculture education program; (5) the largest group of completers currently enrolled at a two-year junior/community college, 39.3 percent, followed by a four-year college/university (34.6 percent), Young Farmer/Farm Management Program (21.1 percent), and private vocational schools (5 percent).

Rainbolt, B. (1989). Individual study needs assessment. (State-wide Assessment). Colorado State University, Fort Collins.

The primary aim of this assessment was to determine the level of use of individualized instruction within vocational agriculture programs in Colorado. Identification of those items that would assist the agriculture teacher in providing quality individualized instruction was included in the study. The participants that were surveyed in the study were the secondary vocational agriculture teachers in Colorado. The results of the study are based upon a response rate of 62 percent.

The findings of this study were as follows: (1) Seventy-six percent of the respondents had experience in using individualized instruction as a method for training students; (2) only nineteen percent

of the respondents that had experience in using individualized instruction found the materials they used to be of sufficient quality and quantity: (3) the respondents ranked those items that would assist them in utilizing the individualized instruction method, with "individualized student study packets" being ranked the highest.

CONNECTICUT

Mannebach, A. J. (1989). Revising and updating the agricultural mechanics component of the Connecticut vocational agriculture curriculum. (Connecticut State Department of Education Funded Project). North Windham: Eastconn.

The objectives of the project were (1) to review, revise and update the agricultural mechanics components of the curriculum and to integrate needed competencies into each unit of instruction, (2) to prepare a copy of the agriculture curriculum and enter it into the Connecticut State Department of Education computer system, and (3) to print copies for use by Connecticut vocational agriculture teachers.

The project was conducted as a result of joint planning by the project director and the state consultant for vocational agriculture, Connecticut State Department of Education. The project director and the project specialist reviewed existing agricultural mechanics curricula, updated the agricultural mechanics units of instruction, developed new units of instruction, and worked cooperatively with agricultural mechanics teachers in the state to obtain input, suggestions and feedback. A three credit graduate course was held in conjunction with the project to obtain the input and revision needed by the vocational agriculture teachers enrolled. Related job titles and relevant industry validated competencies from the National Competency Study were identified and integrated into each unit of instruction. The revised curriculum was entered into the state department of education computer system for easy update and revision in future years. Printed copies were made available to vocational agriculture teachers in Connecticut Regional Vocational Agriculture Centers. The updated curriculum will help students enrolled in the agricultural mechanics component of the Connecticut vocational agriculture program to develop knowledge, skills and attitudes needed to become employed or self-employed in today's competitive labor market. The infusion of competencies into each unit of instruction will help Connecticut teachers of agricultural mechanics make their instruction more competency based.

FLORIDA

Arrington, L.R., & McGhee, M.B. (1989). Follow-up of 1983 Florida agribusiness and natural resources education program completers. (Staff Study). Gainesville: University of Florida.

This study is the third phase of a study designed to follow-up 1983 Agribusiness and Natural Resources Education program completers in Florida. The primary purpose was to determine student attitudes about their vocational agriculture experiences five years after graduation and if their attitudes are related to their current occupational status.

Data were collected using a mail questionnaire. The results indicated that approximately 30% were employed in a non-agricultural occupation. Slightly more than 8% were full-time farmers or ranchers and about 11% were part-time farmers. Approximately 42% of the respondents were employed in some type of agricultural occupation.

Experiences in vocational agriculture received very high ratings. Occupational status and highest education level were not related to attitudes about vocational agriculture. Years in FFA and highest FFA degree earned were related to attitudes.

Barrenechea, A. (1989). The adoption of recommended dairy practices in the Villa Maria area, Cordoba, Argentina. Thesis, University of Florida, Gainesville.

The purpose of this study was to determine if selected dairy practices have been adopted and the factors influencing dairy farmers to accept or reject these selected practices in the Villa Maria area, Argentina.

Data were collected through face-to-face interviews of a sample of 51 dairy farmers. Statistical analysis of the data included frequencies, percentages, the Fisher's exact test, and the test of marginal homogeneity.

The results indicated that there was an association between dairy farmers with off-farm activities and with a partner, and the adoption of milking machines. There was also an association between farm size and the adoption of calf raising.

Additional results show that for adopters of the studied practices, mass medias were important sources of information regarding these practices. For the nonadopters, television and radio were more important as sources of information; private consultants were the institutional contact most used by dairy farmers as sources of information.

Herren, R. V. (1989). Effects of Georgia's Quality Basic Education Act on secondary programs of agricultural education. (Staff Study). The University of Georgia, Athens.

The purpose of this study was to determine the effects of Georgia's Quality Basic Education Act (QBE) on secondary programs of agricultural education. Specific objectives of the study were to determine: (1) the perceptions of the agriculture teachers regarding the effect of QBE on their programs; (2) the effect of QBE on the morale of the teachers; (3) the teachers' perceptions as to whether or not QBE had met the major needs as outlined in the legislation; and (4) the number of students who were restricted from participating in FFA activities because of state regulations. Responses to the researcher designed instrument were obtained from a randomly selected sample of 100 teachers. A mailing and two follow-ups yielded a return rate of 90%.

Findings of the study included: (1) at least one-half of the teachers believed that QBE had a negative effect on their programs; (2) almost three fourths of the teachers felt that their morale as a teacher had decreased as a result of QBE; (3) most of the teachers appeared to be undecided as to whether or not QBE has met its stated objectives; (4) in 1988-89 a mean of 12.5 students per school who were declared ineligible to participate in FFA activities due to state regulations. If this finding for the sample is projected for all 191 high school programs in the state, there were almost 2400 students in the state who were not allowed to participate in FFA activities during the 1988-89 school year.

Sheppard, D. J. (1989). Attitudes of major constituent groups toward recommendations for future directions of the vocational agriculture program in Georgia. Doctoral dissertation, The University of Georgia, Athens.

The purpose of the study was to verify the findings and recommendations emanating from the 1986 Georgia Vocational Agriculture Futures Conference. A stratified random sample of educators, agribusiness leaders, and producers was contacted by mail to evaluate that 50 conference recommendations on a five point Likert-type scale. Forty-seven conference recommendations were supported by the 503 respondents, two were questionable, and one was rejected. Conclusions of the study are as follows: (1) modification of vocational agriculture programs is timely and appropriate; (2) mean responses to the Futures Conference recommendations were not affected by the respondent's sex, race, enrollment, status of children in vocational agriculture, or geographical location; and (3) mean responses to the recommendations were affected by the respondent's educational level, and personal vocational agriculture enrollment status while in high school. It was recommended that the findings be used in modifying the Vocational

Agriculture programs in Georgia; each of the 47 recommendations verified by the study should be enacted.

Varnadore, W. L. (1989). Characteristics of the meat industry in the year 2000 with implications for curriculum development in agricultural education. Doctoral dissertation, The University of Georgia, Athens.

The primary purpose of this study was to determine the characteristics of the meat industry in the year 2000 and subsequently to make curriculum content recommendations for course work in agricultural education. Specific objectives were to: determine if the Delphi technique could achieve consensus among meats experts as to the profile of the meat industry in the year 2000, and to predict the training needs of the work force entering the meat industry in the year 2000. A national panel of 31 experts in the meat field rated 98 statements on a five point Likert-type scale in two iterations. They also listed 811 comments. The instruments were administered by mail.

Findings for the study were: (1) the Delphi technique may be efficiently used to determine consensus among meat industry experts; (2) there was no significant difference in the experts' opinions based on their geographic location; (3) the meat industry will change rapidly in the future. The demand for education and training programs will increase and there will be more employment opportunities in the meat industry. Twenty-two content items were identified for inclusion in the agricultural education curriculum to prepare workers for the meat industry of the future.

IDAHO

Bauer, M. E. (1989). An educational needs assessment of alternative crop oriented clientele in north Idaho. Master of Science thesis, University of Idaho, Moscow.

The purpose of this study was to determine the need, as perceived by growers, for educational programs relating to alternative crops in north Idaho. Thirty-seven individuals who attended alternative crop educational programs were personally interviewed in two northern Idaho counties.

Major findings were that these alternative crop oriented clientele generally possessed the following demographic and economic characteristics: 10 years or less of farming experience in the study area; 1988 gross farm income of $5000 or less; an off-farm income of more than 91% of 1988 gross income. The majority utilized printed material, extension agents and networking for alternative crop information gathering. The factors encouraging participants to grow alternative crops were economically oriented. The factors discouraging the adoption of alternative crops in the area were market and credit concerns. Berries were cited as the most promising alternative crop of the 5 responses (69.2%)

Participants self-perceived most confident specific subject matter area was cultural practices of alternative crops. The least confident was marketing and finance.

Recommendations included the targeting of extension educational programs to individuals with small acreage farms', limited farming background and experience, and limited time; utilization of practical educational experiences, literature of networking in extension programs; and an emphasis in marketing aspects of berries, vegetables, and herbs.

Burton, L. D. & Pals, D. A. (1989). Adoption of research validated teaching behaviors by northwest agriculture teachers. (Idaho Agricultural Experiment Station Staff Study). University of Idaho, Moscow.

This study was designed as a regional replication of a larger national study. Its purpose was to describe the degrees to which research validated behaviors associated with effective teaching have been adopted by secondary teachers of agriculture in the northwest. The total population was 652 teachers. The sample included all Idaho secondary agriculture teachers and 52.5 percent of those teachers selected randomly from Montana, Wyoming, Utah, Nevada, Oregon, and Washington. The total sample size was 382 and the response rate was 72.5%.

The result of this research effort was a listing of positive impacts on student learning. The data indicated that the teaching behaviors which were identified are applicable to teaching in the secondary agriculture setting.

Respondents in this study reported similar behaviors to an earlier national study in the areas of productive teaching techniques, organized structural class management, and professional responsibilities. Northwest agriculture teachers reported scores of greater magnitude than were observed in the national study for positive interpersonal relationships.

It is recommended that a companion instrument be developed and completed by administrators or peers. Such a procedure would reduce the bias which can be introduced when self-analysis procedures are used. Additional research on implementation of effective teaching behaviors is needed.

Christensen-Asher, L. I. (1989). Inventory of training levels for the statistical based management (SBM) program at Kraft, Pocatello. Master of Science professional paper, University of Idaho, Moscow.

The purpose of this study was to conduct a training inventory for the Kraft Plant in Pocatello, Idaho. The specific objectives were: (1) determine the present training level of Kraft employees; (2) determine employees understanding and awareness of Statistical Based Management programs within the industry and (3) employer perception of how the SBM programs would work in the plant. Questionnaires were distributed to 236 full-time employers. Ninety-one were returned for a 39 percent return rate.

Survey returns indicated that employee's previous training levels related to their perception of the ability for the program to work in Kraft facilities. Those individuals with some previous background training in the program held more positive attitudes toward the program than those who had limited exposure to Statistical Based Management programs. Results indicated a need for Kraft management to evaluate the training programs and the individuals who are instruction the program. The data revealed a possible advantage and correlation between the use of a pay incentive and a positive program acceptance by employees.

Lierman, Shannan R., Beitia, Marc G., & Riesenberg, Lou E. (1988). Secondary agriculture program enrollment changes described within selected program delivery systems. (Staff Study). University of Idaho, Moscow.

The primary purpose of the study reported in this paper was to determine the changes made in the methods of delivering secondary agricultural education in Idaho and describe the change in program enrollments within the changes that have taken place.

Program characteristic data were gathered with a self-administered, fixed response mail questionnaire to secondary agriculture instructors from schools in Idaho that offered secondary agriculture during the 1988-89 academic year.

Perhaps the greatest changes in program delivery have been made in the student's ability to access a program area. Significant movement

from the traditional to open entry and introductory class approach for students entering the agriculture program seems to have taken place. Programs with open entry student access to their program reported an increase in program enrollment, whereas, the traditional or introductory class schemes reported decreases in program enrollment.

Agriculture programs with traditional student access to the program coupled with traditional year long courses reported the largest average program enrollment decrease. This is noteworthy because of the number of programs with that combination.

While the number of students enrolled in a secondary agriculture program is not an exclusive indicator of program quality or appropriate measure of program outcomes, the measure has none the less been very highly used and is perhaps the most frequently used by secondary education personnel when administrative decisions are made about secondary agriculture and other programs. This measure is important and secondary agriculture programs are changing from the traditional delivery system in response to the program enrollment criterion.

Those instructors reporting teaching responsibilities outside the agriculture program reported a decrease in the program enrollment as compared to the increase reported by programs whose instructors did not have outside teaching assignments. It is highly probable the instructors having outside teaching responsibilities received those assignments as a result of a decrease in program enrollment.

Mundt, John P. (1989). The induction year - a naturalistic study of beginning secondary teachers of agriculture in Idaho. Doctoral dissertation, University of Idaho, Moscow.

This study investigated patterns of behavior exhibited by beginning secondary teachers of agriculture in Idaho during the induction period which was defined by this study as the first year of teaching.

The population included all the beginning secondary agriculture teachers in Idaho in their first year of service during the 1987-1988 academic year. The population was all male and comprised eight individuals.

The researcher assumed the role of a participant-observer-helper. Data were generated from the perspective of the individuals being studied. Comprehensive field notes of happenings, interactions, and behaviors were recorded. Data analysis was a concurrent activity which was conducted as data were collected throughout the study. The data are reported as eight individual ethnographics.

Major findings include: (1) As a result of inexperience in dealing with problems and issues, the behavior exhibited by beginning agriculture teachers appeared to be a lack of self-confidence; (2) Feelings of beginning agriculture teachers often focused on confusion, frustration, and isolation; (3) Approaches utilized by beginning agriculture teachers appeared to be varied due to individual personality traits; (4) Organizational and management issues appeared to be monumental for beginning agriculture teachers; (5) Physical facilities

and the management of those facilities appeared to be big problems for the beginning teachers of agriculture; (6) Beginning teachers generally used limited variety in classroom teaching techniques; (7) Clearly defining daily teaching objectives and classroom expectations in terms of student classroom behavior appeared to be problems for beginning agriculture teachers; (8) Little additional help or supervisory assistance is provided by principals to beginning agriculture teachers; (9) Beginning teachers would have preferred more in classroom supervision from their principal; (10) Perceptions of principals relating to approaches, behaviors, and feelings of beginning teachers were essentially dismissed as being typical for first year teachers.

Orthel, Glen R., Sorensen, Jim L., Lierman, Shannan R., & Riesenberg, Lou E. (1988). High school students' perceptions of agriculture and careers in agriculture. (Staff Study). University of Idaho, Moscow.

This study was conducted to determine how high school students perceive the industry of agriculture and the related career opportunities. The specific objectives of the study were: (1) To determine the perceptions of agriculture held by high school students; (2) To determine the perceptions of pursuing a career in agriculture held by high school students; (3) To identify factors contributing to the perceptions of agriculture and pursuing a career in agriculture held by high school students.

The subjects selected as the sample of this study were either sophomores or juniors enrolled in a high school English class. Three open ended questionnaires were administered in late March, 1988.

Based on the findings of this study, the following conclusions were formed: (1) Students in the population represented by the sample of this study have a very inadequate perception of what constitutes the industry of agriculture. The students perceive agriculture as farming and ranching only. Little evidence exists to suggest the students have factual information on which to base their perceptions; (2) Students in the population represented by the sample of this study have a pervasively negative opinion of pursuing a career in agriculture; (3) The factors identified to be influencing students' opinions deal almost exclusively with production agriculture. The factors classified as negatively influencing opinions are popularly held perceptions about a career in production agriculture. It would seem the students have not been exposed to factual information about the industry of agriculture and its associated careers; and (4) Enrollment in high school agriculture classes has a positive and an information correcting influence on the students' perceptions of agriculture and opinions of pursuing a career in agriculture. However, the impact is less than expected. This may in part be due to the production oriented nature of many traditional secondary agriculture programs.

Pals, D. A. & Burton, L. D. (1989). Attitudes of northwest secondary vocational agriculture instructors toward improvement of teaching and inservice. (Idaho Agricultural Experiment Station Staff Study). University of Idaho, Moscow.

The purpose of this study was to determine the secondary vocational agriculture teacher attitudes toward the improvement of teaching and inservice in seven northwest states. The total population was 652 teachers. The sample included all Idaho secondary agriculture teachers and 52.5 percent of teachers selected randomly from Montana, Wyoming, Utah, Nevada, Oregon, and Washington. The total sample size was 382 and the response rate was 72.5%.

The average age of vocational agriculture teachers in the study was 38.4 years. The average years taught for the teachers in the seven states was 12.3 years. Approximately 58% of the teachers in the seven states had B.S. degrees with 40.3% reporting they had earned a Masters degree.

The data confirmed that the teachers in the seven northwest states have a positive attitude toward inservice education and want to improve their teaching. The teachers also indicated they wanted to be part of the planning of inservice education activities. They preferred inservice activities to be conducted at various times during the school year and summer. They agreed that industry, extension staff, veteran teachers, university personnel, and state staff should provide inservice education with a preference given to agriculture industry personnel.

The practical benefit of this study may be the use of the data by those responsible for planning inservice for vocational agriculture teachers in the seven northwest states.

Riesenberg, L. E. & Lancaster, L. L. (1989). High school agriculture program completers and their success in college. (Staff Study). University of Idaho, Moscow.

This study sought to determine the success in college of secondary agriculture program completers as compared to the success in college of students not classified as high school agriculture program completers.

The secondary agriculture program completers from 1981-82 through 1987-88 constituted one of the populations of this study. From this population, 240 students who had matriculated to the University of Idaho during 1982-83 through 1988-89 were selected as a sample for this study.

Students not classified as secondary agriculture program completers and having matriculated to the University of Idaho during 1982-83 to 1988-89 constituted the second population of this study. A random stratified sample was chosen from this population and was used as the comparison group.

Data were analyzed by ANOVA for unequal numbers within groups using SAS with an alpha level of 0.05.

Findings of this study indicated no significant differences between the secondary agriculture program completers and non-completers on the high school related variables. When the two samples of students

were compared on college variables of first semester credits and first semester GPA, no significant differences were found. A lower retention rate of secondary agriculture program completers was observed; however, this was not due to academic probation or disqualification. The college variables of cumulative GPA and graduate rate in 5 years or less showed no significant differences between the groups.

These findings indicate that the samples of this study were drawn from the same population. The results of this study have the following implications: (1) secondary agriculture program completers are well prepared for and succeed in college, (2) if secondary agriculture is not accepted for admission to the state's colleges and universities, the future potential secondary agriculture program completers will have to decide whether to enroll in agriculture or in other subjects based on information not consistent with the findings of this study.

Smyers, Gaylen L. (1989). An assessment of secondary agricultural education in the Mini-Cassia area. Master of Science thesis, University of Idaho, Moscow.

The primary purpose of this study was to: (1) determine the perceptions of the residents of Cassia and Minidoka counties in southern Idaho concerning the food and agriculture industry; (2) determine the level of public awareness concerning agricultural education in the Mini-Cassia area; (3) determine the value and perceived image of the agricultural education/FFA program in the Mini-Cassia area; (4) determine the opinion of the public school curriculum and the relationship to secondary agricultural education/FFA; (5) determine the public perception of agriculture industry problems and concerns; and (6) determine the public's views of the future of agriculture in the Mini-Cassia area.

The population for the study consisted of residents of either Cassia or Minidoka county and were randomly sampled to provide an accurate sample group.

The data indicated that 76 percent or more of the local economy was directly related to agriculture. Nearly 75 percent of the respondents viewed the future of agriculture optimistically; however, nearly 60 percent said they would not encourage their children to seek a career in agriculture. Slightly less than half of the respondents indicated that agriculture had a good image while just over 50 percent felt that the general public had only a fair understanding of the total food and agriculture system.

Nearly 97 percent of the respondents indicated an awareness of secondary agriculture/FFA while 60 percent had never enrolled. The high level of awareness was largely attributed to FFA activities. Over 90 percent felt that agriculture education was important and nearly 75 percent agreed that it could benefit any secondary student. A total of 93.7 percent felt that improving agricultural education would benefit agriculture.

ILLINOIS

Southern Illinois University, Carbondale

Buyck, Steven C. (1989). Guidelines for a quality Supervised Agricultural Experience Program for a secondary agriculture education program. Master of Science, Southern Illinois University, Carbondale.

The purpose of this study was to identify guidelines or strategies that an agriculture education instructor can use to develop or revise a Supervised Agriculture Experience Program.

A questionnaire and a cover letter were mailed to a sample of sixty Illinois agriculture education instructors to gather the data needed to answer the research questions.

Based on the data collected from the questionnaire, the following conclusions were made regarding each research question.

1. Student participation in SAEPs is increasing, while the enrollment of the agriculture education is decreasing.
2. SAEPs include a wide range of project areas for the students.
3. The length of the instructor's teaching contract and the number of students with a SAEP has a significant relationship to the amount of instruction time that is spent on SAEPs.

- There is a positive relationship between the length of the instructor's teaching contract and the number of students in the program with a SAEP.
- The number of students with SAEPs increase if the SAEP is required by the instructor.
- The agriculture education instructor's past FFA activities has no significance with the number of students with a SAEP.

4. Students that have a SAEP in high school will have a higher grade point average in the agriculture education program. The researcher recommends that all students enrolled in agriculture education be required to have a Supervised Agriculture Experience Program.

Matthews, Joseph L. (1989). Mathematics skills taught by vocational agriculture teachers in secondary vocational agriculture programs in Illinois. Master of Science, Southern Illinois University, Carbondale.

A sample of secondary vocational agriculture teachers in Illinois were surveyed to answer in part: What are the relative strengths and weaknesses of specific vocational agriculture subjects in regards to the teaching of mathematics skills? A list of mathematics skills was compiled and then validated. A survey was developed, pilot tested and subjected to a test of internal consistency. The survey asked teachers to identify the vocational agriculture subjects they taught and to rate each of 88 mathematics skills as to the extent the mathematics skill was taught as part of the vocational agriculture program. Descriptive

statistics were reported for the percentage of time spent teaching each of the vocational agriculture subjects and the extent that each mathematics skill was taught. Teachers were grouped according to subject area taught and these groups were compared on the basis of the extent that mathematics skills were taught using a one-way ANOVA (alpha = .05) and multiple t-tests (Scheffe's Fand alpha = .10). The study concluded that teachers who taught a greater diversity of vocational agriculture subjects taught mathematics skills to a greater extent.

Mayfield, Douglas W. (1989). Teaching dairy production. Master of Science in Agricultural Education, Southern Illinois University, Carbondale.

The objectives of this study were to develop an up-to-date collection of teaching materials in dairy science. The areas of concentration were:

1) Dairy History
2) Dairy Herd Health Management
3) Dairy Herd Nutrition
4) Dairy Equipment
5) Governmental Regulations

The data for this study was attained from published materials available. Procedures of acquiring the test sample information were by using the Morris Library card catalog and examining a variety of dairy topics, the ERIC system, and previously acquired materials from courses offered in animal science at Southern Illinois University from the years 1984 through 1989.

The collected data was developed for use as the basis of developing a lesson plan to be used by agriculture instructors to teach students in grades seven through twelve, and be taught in four to six weeks.

McIlwain, June M. (1989). An analysis of the demographics and educational needs of the attendees of a workshop for new and prospective fish farmers. Master of Science, Southern Illinois University, Carbondale.

The expansion of aquaculture in the Midwest and throughout the United States has brought about an increasing need for information transfer. Attendees of a Workshop for New and Prospective Fish Farmers held in March 1989 at Southern Illinois University at Carbondale were used as a sample to assess demographics and educational needs of new and prospective fish farmers in the Midwest. Future aquacultural education opportunities should address: farmers, future aquacultural educators, and others; and a middle-aged, educated audience with middle incomes. Topics to be addressed include financial and business planning, marketing different fish farming systems and species, and specific technical information in given subject areas.

Rahman, Masood Ur. (1989). Air assisted and conventional field spraying comparison. Master of Science, Southern Illinois University, Carbondale.

In this study, air-assisted row crop spraying was compared with conventional spraying technique for plant coverage and spray drift control. A Hahn Hi-boy row crop sprayer modified for air assisted spraying was used. Two experiments were conducted for the desiccation of oats and weeds, using paraquat:

1) Three rates (186 L/ha, 93 L/ha, 46 L/ha) of paraquat with air-assist and conventional spraying technique, at natural wind conditions, and
2) One application rate (93 L/ha) of paraquat with and without air-assist, using external wind force of 19 km/hr - 24 km/hr.

Percent desiccation in both the experiments were evaluated. The air assisted spraying technique seemed to be superior to the conventional spraying in terms of plant coverage. Statistical analysis for chemical drift showed no discernable significant difference between the two different techniques.

Wambugu, Edward G. (1989). Career counseling and guidance in Kenya. Master of Science, Southern Illinois University, Carbondale.

The study was carried out to determine the competency of the training programs in Kenya in preparing the student for employment. The study was mainly concerned with determining the specific problems or opportunities for the students who are trained in Kenyan colleges. The main concerns of this study were based on three research questions:

1. Does mutual dependence (marital status) have any significant implications on occupational choice with relation to family interests? Forty eight students (27%) were married. Marital status does not have significant influence on career choice.
2. What factors contribute to career dissatisfaction, occupational change or transfer after a lengthy period of training? Career dissatisfaction primarily results from lack of competence and skill required to provide a confident environment required for work. This confidence is lost either by lack of information, poor skill or training which is further aggravated by financial instability.
3. What is the current situation in career education in Kenya? Most of the students in Kenyan colleges do not have definite career destinations primarily due to lack of information on the careers they are training. The bridge between the student, trainer and employer is too weak to provide the students with solid career requirements and benefits.

This study attempts to tie the three questions together with the findings to develop a training program that will provide skilled, specialized and employable graduates in all fields.

Zhiying, Shan. (1988). A study of needs in developing self-study programs in vocational education in China. Master of Science, Southern Illinois University, Carbondale.

The primary purpose of this study was to determine whether self-study was a viable alternative delivery method for vocational education in China. Two questions were developed to answer this purpose:

1. Which groups of Chinese people need self-study in vocational education in terms of seeking employment and satisfying occupational expectations?
2. What factors determine the need for self-study in vocational education in China?

To answer these two questions, the literature reviewed presented: a brief review of China's vocational education, capacities of China's vocational education system, and a description of Chinese youth. Seven groups of Chinese youth were identified by their background and educational characteristics. Based on the analysis of the literature regarding Chinese vocational education and Chinese youth, the following conclusions were made.

1. In order to seek employment and satisfy occupational expectations, there are needs for self-study in vocational education from the following seven groups of Chinese people: a) junior middle school graduates beyond sixteen; b) "awaiting employment" youth; c) senior high school graduates; d) rural junior graduates; e) employees as replacement of their parents; f) graduates of vocational schools; g) young people in private enterprises.
2. Basically, three factors determine the needs for self-study in vocational education in China. These factors are: a) the weakness of Chinese vocational education; b) the limited capacities of Chinese conventional vocational education; c) the large size of young population in China.

Zubairu, Maiwada. (1989). Development of competency based curriculum models for two-year post-secondary agricultural training in Nigeria. Master of Science, Southern Illinois University, Carbondale.

Forty-three agricultural science curricula were obtained from two year colleges in the United States to answer in part: What are the agriculture curricula used and the courses included in the curricula? Skill groupings were outlined from which to analyze the curricula. Descriptive statistics were reported for the mean percentage of time spent on the skill groupings and the frequency of course under each skill grouping. The curricula were grouped into transfer and non-transfer and the relative strength of each skill grouping were reported. Overall, eight transfer and thirty three non-transfer were analyzed.

The study concluded that, the transfer agriculture curricula emphasized general science skills and general education required at a four year college (University). Other areas of agriculture were also taught. The non-transfer curricula were regionalized in terms of crop

and animal production courses based on the region the curricula were obtained. In addition, all non-transfer curricula included work experience and had courses on application of microcomputers in agriculture. Implications were drawn for the development of competency based curricula models for two-year post-secondary agricultural training programs in Nigeria.

University of Illinois, Urbana-Champaign

Hamzah, R. (1988). The use of problem solving teaching among vocational agriculture teachers in Illinois. Master's equivalency study, University of Illinois, Urbana-Champaign.

The purpose of this study was to examine the knowledge, attitudes, and use of problem solving teaching (PST) as reported by Illinois high school agricultural teachers. A 25% simple random sample (n=80) was drawn from the 1987-88 population of secondary agricultural teachers (N=316). Data were collected via a mailed questionnaire, which was determined to have content validity. Internal consistency of responses was evaluated using the KR 20 formula and Cronbach's alpha coefficient. Reliability values ranged from .62 to .80. A 76% response rate was obtained.

On an 11 item knowledge test the mean score was 8.32 (SD=1.74). The range of scores for the 20 item attitude scale was 52 to 98 (100 possible) (M=70.17). About one-third of the teachers reported that PST received "very much" to "exclusive" emphasis during their undergraduate program and from their cooperating teacher during student teaching. About one-half of the teachers reported that their university supervisor placed heavy emphasis on PST during student teaching. Thirty-nine percent of all lessons were taught using PST. Teachers reported high levels of confidence in using PST. Major reasons cited for not using PST included (1) topics not well suited to problem solving and (2) lack of good reference materials. Attitudes toward PST were positively related to (1) use of PST, (2) emphasis given to PST by cooperating teachers and university supervisors, (3) use of PST during student teaching, (4) current level of confidence in using PST, and (5) percentage of students with SAE programs. Multiple regression analysis showed that 60% of the variance in teacher's use of PST could be explained by teacher's attitude toward PST, percentage of students with SAE programs, use of PST during student teaching, and confidence in using PST when teachers first began teaching.

Law, D. A., & Pepple, J. D. (1989). Secondary Agricultural Education Core Curriculum, Phase II. (Staff study funded by Illinois State Board of Education, Department of Adult, Vocational and Technical Education). University of Illinois, Urbana-Champaign.

The primary purpose of this phase of the study was to develop curriculum in two major cluster (content) areas: Agricultural Business and Management and in the Central (orientation) Core. The Agricultural

Business and Management cluster consists of ten modules in agribusiness operation and management; twelve modules in animal science; ten modules in plant and soil science; five modules in food science and technology; and seven modules in agricultural engineering/mechanization.

The Central cluster consists of eight modules in agricultural literacy; eight modules in generalizable skills in agricultural occupations; eleven modules in basic principles of agricultural science; five modules in basic agribusiness principles and skills; four modules in developing leadership capabilities; and three modules in supervised experience programs.

Each module contained student learning objectives, problems and questions for study, suggested teaching activities and procedures, references, information sheets, transparency masters, student worksheets, tasks addressed, and state goals for learning were addressed.

In addition, a state plan for agricultural education, The Illinois Plan for Agricultural Education: A Planning Guide was developed.

Matulis, J. K. (1989). Attitudes, perceptions, and guidance practices of Illinois guidance directors concerning vocational education in secondary schools. Doctoral dissertation, University of Illinois, Urbana-Champaign.

The primary purpose of this study was to determine the attitudes, perceptions, and guidance practices of guidance directors concerning vocational education in comprehensive secondary schools in Illinois. A secondary purpose of this study was to investigate the relationships among the attitudes, perceptions, and counseling practices of guidance directors concerning vocational education and selected demographic variables.

The target and accessible populations were all guidance directors in comprehensive secondary schools in Illinois. Proportionate stratified random sampling was used to determine the actual sample of 253 guidance directors, with size of high school enrollment as the stratifying variable. A pilot study revealed that the questionnaire, developed by the researcher, possessed validity and reliability. Questionnaires were mailed to subjects in April, 1988. Reminder postcards and follow-up questionnaires also were mailed. Statistical procedures used to address this study's research questions were: frequency distributions, percentages, means, standard deviations, t-tests, analysis of variance, correlations, and multiple regression. Since no significant differences between respondents and non-respondents were observed, the results obtained from the respondents were generalized to the entire sample and the target population.

Findings and Conclusions: (1) Guidance directors had generally positive attitudes toward vocational education in comprehensive secondary schools (3.63 on the 5-point scale); (2) Guidance directors were generally uncertain concerning their perceptions of vocational education in their schools (3.30); (3) The overall program quality mean was higher for business education (3.98) compared to agricultural education (3.49), home economics (3.44), and industrial education

(3.41); (4) Departmental guidance practices concerning vocational education were perceived to be generally positive (3.74) by guidance directors; (5) Significant, positive relationships were observed between guidance directors' attitudes toward vocational education and departmental guidance practices (r=.60) and between their perceptions of vocational education in their schools and departmental guidance practices (r=.42).

Pepple, J. D., Valdes, C. M., Law, D. A., and Helgesen, C. E. (1989). 1988 agricultural employment data for the Illinois food and fiber system. (Report). Funded by Illinois State Board of Education, Department of Adult, Vocational and Technical Education. University of Illinois, Urbana-Champaign.

The complexity of the food and fiber industry poses problems to those who collect and analyze available labor market information (LMI) in hopes of identifying and meeting instructional program needs. Most LMI does not adequately reflect the off-farm portion of the food and fiber industry. Therefore, the purpose of this study was to develop a new approach for analyzing and reporting labor market information as it related to the food and fiber industry in Illinois.

The Illinois Department of Employment Security (IDES) is the official state agency charged with collecting, analyzing, and reporting employment data. Using IDES data which reported a civilian work force of 5,648,000 in Illinois (representing all workers, including unpaid family workers and the self-employed which account for a total of 350,000), this study identified 1,153,768 workers in the Illinois Food and Fiber System. The agricultural based employment was determined to account for 20.4 percent of the Illinois civilian employment. To ascertain the importance of the agricultural-related employment in Illinois, input-output (I/O) analysis was used following the guidelines of a U.S.D.A. national study.

The data generated by this study indicates the industries (SIC classifications) where workers are employed, the types of occupations (OES classifications) of the workers, and the data reports both state-wide and regional employment.

Pepple, J. D., Valdes, C. M., Law, D. A., and Helgesen, C. E. (1989). State-wide occupational employment study in agriculture: agricultural service industries. (Report funded by Illinois State Board of Education, Department of Adult, Vocational and Technical Education). University of Illinois, Urbana-Champaign.

The purpose of the study was to collect and report employment data for the Agricultural Service Industries (SIC 07) in Illinois. Of all the Major Groups classified under the Agricultural Division, 07-Agricultural Services was the only Major Group where no statistical survey was being conducted by the Illinois Department of Employment Security (IDES).

Specific business addresses were identified and printed by IDES. Questionnaires were assembled and mailed along with a cover letter and

self-addressed return envelope to almost 3,000 businesses classified by IDES as an Agricultural Service Industry. The final return rate for the 07 data was 66%. Estimated employment data were calculated and verified using IDES statistical procedures.

This study identified a total of 24,183 employees in Illinois Agricultural Service (SIC 07) Industries. The greatest number of employees (69%) were found in the Landscape and Horticultural Services (078) sectors. The second largest employing sectors was Veterinary Services (074) with almost 20% of the employees. The remaining employment is almost equally divided between Animal Services (075) and Soil Preparation, Crop, Farm Labor and Management Services (071, 072, and 076) with 5% and 6% respectfully completing the remaining employment opportunities.

Thompson, J. C., Jr. (1989). Beliefs and intentions of counselors, parents, and students regarding agriculture as a career choice. Doctoral dissertation, University of Illinois, Urbana-Champaign.

The purpose of this study was to examine the beliefs held about agriculture by high school guidance counselors, juniors and their parents, and the relationship between these beliefs and the intentions of these groups to select or consider agriculture as a career choice.

The three sample groups were obtained through a stratified random selection of schools (n=82). Data were collected through a mailed questionnaire from guidance counselors (n=82) who then administered it to juniors (n=1041) and their parents (n=712). A three part questionnaire was specifically designed for use in this study.

The Beliefs About Agriculture scale was factor analyzed to determine the most internally consistent items for measuring respondents' beliefs about agriculture. Three subscales identified from the factor analysis were: Agriculture As a Career, Academic Preparation, and Agriculture in Illinois.

Analysis of data included means, standard deviations, frequencies, analysis of variance, multivariate analysis of variance (MANOVA), t-tests, and correlation coefficients. The alpha level was set at 0.05.

The major findings of the study were as follows: (1) A MANOVA computed for the beliefs subscales indicated overall effects for group ($p<.01$) and sex ($p<.05$); (2) There were significantly ($p<.05$) more positive beliefs and intentions favoring younger-aged parents (below age 40), persons with formal education beyond high school, and residents of large urban communities; (3) Ethnicity was determined not to be a significant factor in respondents beliefs or intentions; (4) A significantly ($p<.05$) positive relationship was found between exposure to coursework in agriculture and students' beliefs about agriculture as a career choice; (5) the reporting of agricultural news by broadcast media, especially television news, appeared to be associated with the least favorable beliefs and intentions indicated by the three groups; (6) High school juniors' beliefs about agriculture were significantly related to their intentions to select agriculture as one of their career choices.

Akpan, M. J. (1989). The role of volunteer leaders in the cooperative extension 4-H youth development program in selected counties in Iowa. Masters of Science thesis, Iowa State University, Ames.

The purpose of this study was to examine the role of volunteer leaders in assisting the Iowa Cooperative Extension Service in conducting the 4-H youth development program. A secondary purpose was to focus on the skills necessary and methods used to carry out volunteer leader responsibilities. It was also intended to determine why these volunteers chose to volunteer. The design of the study was a descriptive survey. The population for this study included all the volunteer leaders in Boone and Greene counties in Iowa serving in different capacities in assisting the cooperative extension service in conducting youth development programs. There were 73 4-H leaders in Boone county and 48 4-H leaders in Greene county. A mail questionnaire was used to collect the data from 121 potential respondents. Eighty-two questionnaires were returned for a response rate of 71.1%. The questionnaire had the following sections: reasons for participating, functions of volunteers, teaching methods/tools used, skills necessary for being an effective volunteer.

The results of this study indicated that volunteers participate in 4-H programs for a variety of reasons, a majority of which are centered around both personal volunteer growth and a sense of service to youth. Volunteers serve a number of functions from program planning to leadership development and teaching. The teaching methods most used were demonstrations, exhibits, tours and workshops. The volunteers indicated that they needed more training in teaching methods both of a traditional nature and also new methods and tools such as role playing, computers, case studies, etc. Volunteers also indicated a need for more training in the following areas: listening skills, record keeping, citizenship and leadership skills, planning and decision-making skills, and communication skills. It was recommended that educational programs be conducted for volunteers on a continual basis in order to better and more efficiently use the skills and talents of volunteer leaders.

Andrews, D. H. (1989). Attitudes of selected Iowa farm operators toward soil and water conservation. Master of Science thesis, Iowa State University, Ames.

The objectives of the study were to: 1) determine the attitudes of farmers toward soil and water conservation; 2) determine conservation practices farm operators consider successful; and 3) identify the successes and barriers farm operators encounter in the adoption of soil conservation practices. Farm operators in five townships located in central Iowa serve as the population for this research. A random sample of 50 farm operators was selected from 169 farmers in the sampling frame. The research employed explanatory descriptive procedures with a

casual-comparative design. The instrument included 40 statements about soil and water conservation and questions to gather demographic data.

The findings revealed that farmers believed the loss of soil was a problem that warranted attention. However, they were less enthusiastic about enacting laws to legislate soil loss limits. Farmers agreed that farm chemicals were at least in part responsible for the quality of groundwater. However, they were undecided as to the necessity of mandatory controls for use of agricultural chemicals. The farmers highly agreed that more education on conservation of natural resources is needed. The homogeneity of farmers' favorable attitudes toward conservation of natural resources was evident, regardless of groupings by demographic variables.

The majority of farm operators listed minimum tillage, grass waterways and strip cropping/crop rotation as the most successful conservation practices. Barriers to adopting more complex conservation methods were a lack of money for new equipment, terraces and tile, along with inconsistent yields due to poor weed control and fertilizer placement. Over one-half (52%) of the farmers wanted more help laying out a conservation plan and increased cost-sharing for tile and terraces, as forms of needed assistance.

Bounaga, L. (1989). Preferred sources and methods of obtaining information related to adoption of soil conservation practices by landowners of highly erodible fields in Franklin County, Iowa. Master of Science thesis, Iowa State University, Ames.

The purpose of this study was to identify informational sources and methods by which landowners of highly erodible fields preferred to learn about soil conservation practices. Questionnaires were mailed to a random sample of 150 landowners drawn from the population of 594. Preferred sources were: 1) neighbors, friends, family and other farmers, 2) the Soil Conservation Service, 3) the Agricultural Stabilization and Conservation Service, 4) The Cooperative Extension Service and 5) agribusinesses. Preferred educational methods were: 1) Face-to-Face, 2) Newspapers and magazines, and 3) Newsletters. The respondents who had not started a conservation plan (15%) rated newsletters and tours significantly lower (.05) than other landowners of highly erodible fields.

Bruening, T. H. (1989). Perceptions of Iowa farm operators and soil conservation district commissioners regarding selected soil and water conservation practices. Doctoral dissertation, Iowa State University, Ames.

The primary purpose of this study was to identify and analyze the perceptions of soil conservation district commissioners and other farmers in Iowa regarding the use of selected soil and water conservation practices. A secondary purpose was to identify the implications of these perceptions to educational practice.

The population of the study included all 500 district commissioners in the state, as well as all of the farm operators in the state (109, 367) as determined by the Agricultural Stabilization and Conservation Service. One-half of the commissioners and four hundred eighty-one non-commissioner farmers were selected as the sample. A six-section survey instrument was developed through the use of an advisory committee. The survey instrument had a reliability coefficient of .84. Descriptive and inferential statistical procedures were used to analyze the data.

The major findings of the study were: 1) there was lack of education regarding soil and water conservation practices; 2) conservation education programs are best when administered at the local level through on-farm demonstrations; 3) farmers in Iowa are not using ridge-till and no-till planting practices at the same rate as farmers often report in other regions; 4) the definition of the term "conservation tillage" is not clear to farmers in Iowa; 5) water quality is a critical concern among farmers; 6) approximately the same level of chemical usage occurs in conservation tillage as conventional tillage systems.

Cassina, E. H. (1989). Levels of job satisfaction of Illinois Cooperative Extension personnel. Master of Science thesis, Iowa State University, Ames.

The purpose of this study was to determine levels of job satisfaction and identify factors affecting satisfaction among county and area professional personnel of the Illinois Cooperative Extension Service. Questionnaires were mailed to a 50% random sample with a return rate of 95%. Overall job satisfaction was 3.5 on a 5 point scale. Older agents tended to be more satisfied. The following items were ranked 4 or above: my relationship with clientele, importance and value of my work, my performance and capability in my job, challenge of my present job, freedom to choose own methods, my feelings about my community, and my feelings about our service. Salary compared to those in similar lines of work was the lowest rated item (2.32). Factor analysis identifies six factors: job importance, supervision, progress in marketing, work overload, salary and facilities.

Cook, A. C. (1989). A framework for the evaluation of the capacity-building components in rural development projects: Implications to program development and agricultural extension education. Doctoral dissertation, Iowa State University, Ames.

In development situations in both the United States and developing countries, there is a concern with the development of the capacity of people to identify and solve their own problems and to determine their own future. Agricultural extension professionals and others involved in development planning and implementation need to be aware of and understand the factors affecting the achievement of capacity-building

objectives in order to successfully develop human resources. The purpose of this study was to develop a framework for evaluating the capacity-building component in rural development projects, to determine which factors contribute to the successful implementation of these components.

A naturalistic, qualitative documentary analysis of project administrative records and related documents was performed to examine the program development processes of selected rural development projects, in both the United States and developing countries, in which development of capacity was one of the overall goals. In the basis of a literature review, questions framed in the CIPP (i.e., Context, Input, Process, Products) model of evaluation, and a conceptual framework of investigation were formulated and then combined to form a matrix to assist in data recording and analysis. The contents of the documents were analyzed and categorized to provide detailed descriptions of the development of each project, with particular reference to capacity-building.

The findings from all the projects were then compared and synthesized. The developed framework proved to be a valuable tool for evaluating the capacity-building components in rural development projects throughout the project development process. The areas of concern focused on establishing objectives, evaluation, external factors, developing and, implementing plans, monitoring plans, using indigenous knowledge, training, process approach, and project development process.

Agricultural extension professionals may be actively involved in all the processes related to the evaluation of a rural development project. They therefore need to work with other development professionals to ensure that the above areas of concern are given due attention in order to facilitate the development of individual and institutional capacity.

Drake, S. K. (1989). An analysis of selected management skills and behaviors perceived to be learned and used by cooperative extension service professionals in Iowa. Doctoral dissertation, Iowa State University, Ames.

This study identified management skills perceived to be learned and used by Iowa Cooperative Extension professionals. The purpose of the study was to assess the extent to which selected management skills and behaviors were performed as perceived by extension professionals in Iowa. A secondary purpose was to determine the extent to which these management skills were perceived to be learned in a structured educational program and used in professional practice.

The study used a quasi-experimental pre-test, post-test design. Eighty-two individuals comprised the experimental group and 63 the control group. The target audience was Cooperative Extension professionals in Iowa. The treatment consisted of a management education course offered by the Department of Agricultural Education at

Iowa State University. Six months elapsed between the pre-test and the post-test assessment.

The research instrument used for this study was the Management Effectiveness Profile System. Survey data were analyzed with descriptive statistics, analysis of variance, analysis of covariance, and stepwise multiple regression.

Fifteen management variables were identified as perceived to be performed by all extension professionals surveyed. These variables include goal setting, identifying problems, effective planning, organizing, decision making, delegating, team building, evaluating performance, developing subordinates, managing conflict, time effectiveness, stress reaction, commitment level, trust level, and results orientation. Goal setting, effective planning, organizing, delegating and team building were perceived to be learned in the management education course.

Four factors were found to be correlated with the perceived management skills. Self-rating was found to be negatively correlated while a positive correlation was found with age, education, and length of service.

Fulgence, J. (1989). Perceptions of minority students at Iowa State University about studies and careers in agriculture. Master of Science Creative Component, Iowa State University, Ames.

The purpose of this study was to identify the perceptions of ethnic minority students regarding the study of agriculture and careers in the agricultural industry. The population of the study included all undergraduate and graduate minority students at Iowa State University (1064) who were U.S. citizens. A random sample of 217 persons was selected to receive a mail questionnaire. The questionnaire focused on the following factors: background and experience in agriculture, knowledge of agriculture, attitude regarding study of agriculture, attitude regarding careers in agriculture, and demographic information.

The major findings of this study indicated that most minority students do not consider the study of agriculture a viable option for them. Minority students appear to have a serious lack of information regarding agricultural career opportunities and an attitude that agriculture lacks the appeal and financial rewards as compared to other career areas. Agriculture was not necessarily perceived to be an inappropriate area of study for students in general but it was perceived as an inappropriate area of study for minority students themselves. Most of the minority students in this study preferred to live and work in an urban area. Most minority students involved in the study never seriously considered agriculture as a career area. The respondents were described as being 1.9% American Indian or Alaskan Native; 48.5% African American; 29.8% Asian or Pacific Islanders; and 19.6% Hispanic. Males made up 57.7% of the respondents and females 42.3% of the respondents. It was recommended that a vigorous information campaign be launched to clear up some of the misconceptions regarding the opportunities in and rewards of careers in the agricultural industry.

Kevin, K. C. (1989). Job satisfaction and perceived inservice needs of Iowa Cooperative Extension personnel. Doctoral dissertation, Iowa State University, Ames.

The specific objectives of the study were to: 1) determine the level of job satisfaction of Cooperative Extension personnel in Iowa, 2) determine and compare differences in levels of job satisfaction for periods ending in 1976, 1980, and 1988, 3) compare the level of job satisfaction according to selected demographic factors, and 4) determine training satisfaction and inservice needs. A questionnaire was mailed to all Iowa Cooperative Extension Service personnel and they responded to selected job satisfaction indicators.

High levels of satisfaction were observed for fringe benefits, importance and value of work, challenge of job, performance and capability of job, feelings about community, and relationship with clientele, and low levels of satisfaction for amount of time and work necessary to do job, adequacy of performance evaluation, salaries compared to others in similar work, and new staff orientation.

Respondents from 1988 were compared to respondents of previous studies (1976 and 1980). Satisfaction differences were observed for 21 of the 36 job satisfaction indicators. Job satisfaction levels for 1988 respondents were significantly lower than that of 1976 or 1980.

Perceived inservice needs analysis indicated more inservice programs were needed in areas of administrative skills, use of satellite inservice, individual study packets, and skills.

Memon, M. Y. (1989). Economic competencies needed and possessed by farmers in Hyderabad District, Sind, Pakistan. Doctoral dissertation, Iowa State University, Ames.

The purpose of this study was to identify the economic competencies needed and possessed by farmers in Hyderabad District, Sind, Pakistan. The population consisted of 97 randomly selected farmers and all 26 agriculture officers in Hyderabad District, Sind, Pakistan. Thirty-seven competency statements constituted the economic competence portion of the questionnaire. Sections of demographic variables and sources of information used by farmers were also included. A Likert-type 1-5 point response scale was used for the study. The data were collected through personal interviews with the respondents.

The findings indicated that farmers possess low economic competence, whereas they need high competence as identified by themselves and agriculture officers. A significant difference at the 0.01 level existed between the level of competence needed and possessed by farmers for all economic competencies included in the study. There was no significant difference in the overall mean for the economic competencies needed and possessed as perceived by farmers when grouped by years of farming experience. When farmers were grouped by educational level, significant differences were observed for several competencies. Farmers with a high school education or more tended to

rate competencies significantly higher than farmers with lower levels of education.

Nxumalo, D. M. (1989). Supervisory role expectations as perceived by agriculture teachers and high school principals in Iowa. Master of Science thesis, Iowa State University, Ames.

The purpose of this study was to determine perceived supervisory role expectations of high school principals and teachers of agriculture regarding instructional programs of agricultural science and technology in Iowa. The population of the study consisted of principals and teachers of high schools with agricultural science and technology instructional programs (209). A random sample of teachers (57) and principals (57) was selected for participation in this study. The research design was a descriptive survey. Data were collected by use of a mail questionnaire. The questionnaire consisted of five parts: expectations, behaviors, techniques, demographic data, and comments. The response rate for the questionnaire was 68%. Follow-up procedures indicated no differences between respondents and non-respondents. Analysis of a T-Test and Pearson Product Moment correlation coefficient. The Cronbach's alpha coefficient for the instrument was .848.

The major findings of the study indicated that while many respondents revealed that instructional leadership was actually occurring in their schools, there was also an indication that more effective supervision was needed. A number of different supervisory techniques were being used but the predominate models were the Wichita Model, Madaline Hunter Model, I-Lead Model and locally designed models incorporating aspects of various other models. Clinical supervisory strategies were often cited as the most desirable. Principals indicated that they had acquired most of their supervisory skills through inservice education programs not formal graduate classes. Time limitations and administrative tasks were often cited as having a negative impact on supervision of instruction. Principal's perceptions were consistently higher than those of the teachers. There were no statistically significant relationships between the perceptions and the demographic variables. The results of this study indicate that while principals and teachers agreed that supervision of instruction is important, they did not agree on how it can best be performed. Teachers felt they should have some role in the supervisory process other than being inspected.

Rajasekaran, B. (1989). A national study to determine the role of the biosciences/biotechnology in agricultural education as perceived by vocational agriculture instructors. Master of Science thesis, Iowa State University, Ames.

The overall purpose of this study was to identify the perceptions held by teachers of agriculture in the U.S.A. regarding the infusion of the biosciences into the study of agriculture. The research design used

for the study was a descriptive survey method. The target population for the study consisted of all vocational agriculture instructors in the U.S.A. Proportionate stratified sampling procedures draw a five percent sample (505). A mail questionnaire containing 127 bioscience competencies was used to collect the data. Two hundred thirty-seven respondents (47%) provided data for this study.

Mean scores and standard deviations were computed for all the bioscience competencies to determine the level of importance of bioscience competencies and also to determine the degree to which vocational agriculture instructors would increase instruction in the bioscience competencies. A correlational analysis was conducted using Pearson product moment procedures in order to determine if relationships existed between demographic factors and perceptions of instructors concerning information of biosciences into the study of agriculture. A one way analysis of variance was used followed by the Tukey method of post-hoc analysis to identify where the differences among the regions of NVATA existed.

The results of the study indicate that some instructors had doubts regarding the teaching of the biosciences in vocational agriculture. Some instructors had a neutral view of the role of the biosciences in diversifying career opportunities for students and broadening experiences in supervised agricultural experience programs of FFA programs. It was clear that instructional materials and inservice programs were needed to expand instruction in agriculture with a greater emphasis on the sciences. Instructors indicated an interest in expanding instruction in the areas of plant growth and development, animal growth, soil problems and groundwater quality and food products and processing. One of the major recommendations of the study focused on the need for prospective teachers to be educated and current teachers to be re-educated regarding the basic sciences of agriculture i.e., genetics, physiology and microbiology.

Rambeaud, O. E. (1989). Importance of attributes of selected practices used in beef cattle production in Argentina as perceived by extension agents. Master of Science thesis, Iowa State University, Ames.

This research focused on analyzing the adoption of selected beef cattle production practices by beef cattle farmers in Argentina, the importance of the attributes of the practices, and the relationship between adoption of each practice and the attributes, based on the perceptions of extension agents.

The analyzed attributes were: relative advantage, compatibility, complexity, trialability, and observability. Also six subdimensions of relative advantage were included. Data were collected by sending a questionnaire to 158 extension agents of the Instituto Nacional de Tecnologia Agropecuaria who were responsible for beef cattle production extension programs in Argentina. A nine-point response scale was used for the study.

Extension agents perceived complexity as the attribute least important and observability as the most important. Significant correlations were observed between adoption and relative advantage for 18 practices, and between adoption and compatibility for 14 practices. Significant relationships were observed between relative advantage and compatibility and between trialability and observability for most of the practices. Regression results indicated that the relative advantage was not only the most common variable in the regression equations but also the best predictor for 16 of the practices. Economic profitability and immediacy of reward were the subdimensions of relative advantage considered most important by extension agents.

Sayed, S. B. (1989). Instructional technology used by the teaching and extension faculty in the College of Agriculture at Iowa State University. Doctoral dissertation, Iowa State University, Ames.

The purpose of this study was to assess the instructional technology used by the teaching and extension faculty in the College of Agriculture at Iowa State University. A secondary purpose was to determine the perceptions of the faculty regarding the future use of instructional technology in teaching and disseminating information. This study was conducted using the descriptive survey method. The population for the study consisted of faculty in the College of Agriculture at Iowa State University who had teaching and/or extension responsibilities. The results showed that the most frequently used equipment was overhead projectors and slide projectors. The least used equipment was personal computers, video cassette recorders, audio recorders, and data projection panels. Barriers to increased use of instructional technology included lack of training and lack of equipment located in the classroom.

KENTUCKY

Boone, H. N. (1988). Evaluation of the degree teachers use the problem solving approach to teaching and the effect it has on student achievement and retention. (Staff Study). Lexington: University of Kentucky.

The purpose of this study was to determine the relationship between the level to which vocational agriculture teachers use the problem solving approach to teaching and student achievement and retention of agricultural knowledge. To achieve this purpose the following research questions were developed: (1) Will an increased level of teacher use of the problem solving approach result in higher student achievement scores? and (2) How will the level of teacher use of the problem solving approach affect student retention of agricultural knowledge?

The population was 99 freshman students enrolled in production agriculture in six Ohio comprehensive high schools. Each teacher taught one unit with a problem solving approach and the second unit with a subject matter approach. Data were collected using a forty question achievement test (Beef Unit Knowledge Test and Weed Unit Knowledge Test) and a fourteen item teaching approach evaluation instrument (Teaching Approach Instrument). The forty achievement test questions were arranged in different ways to produce three identical forms of the exam. The three forms were used as a pretest, posttest #1 and posttest #2. Data analysis for student achievement and student knowledge retention was accomplished with the SPSSX's multiple regression procedure. The conclusions of the study are as follows:

(1) The problem solving approach to teaching increases the level of student retention of agricultural knowledge learned during an instructional unit in vocational agriculture. For the "Controlling Weeds in Corn" instructional unit, the independent variable, problem solving approach, explained 9% of the variance in the dependent variable student retention (p. .05).

(2) Student achievement on an instructional unit in vocational agriculture is affected by their knowledge of the subject prior to studying the unit. For the "Controlling Weeds in Corn" instructional unit, the independent variable, pretest, explained 19% of the variance in the dependent variable student achievement (p. 05).

LOUISIANA

Louisiana State University, Baton Rouge

Borne, C. J. (1988). Perceived effectiveness of agricultural education student teaching in the southern region of the United States. Doctoral dissertation, Louisiana State University, Baton Rouge.

The purpose of this study was to determine the effectiveness of student teaching as perceived by first year teachers, university supervisors and cooperating classroom teachers. The objectives of the study were as follows: 1) to describe student teaching in agricultural education as perceived by first year teachers, university supervisors, and cooperating classroom teachers, 2) to determine first year teachers' self-perceived preparedness for teaching vocational agriculture, 3) to identify perceptions of first year teachers of vocational agriculture regarding sources of self-perceived preparedness, and 4) to identify significant sources of variance in perceived preparedness explained by components of the preservice program and characteristics of first year teachers of vocational agriculture.

Data collected were obtained from questionnaires returned by 59 first year teachers, 52 university supervisors and 112 cooperating classroom teachers who were involved in the agricultural education student teaching programs in the AATEA Southern Region during the Fall of 1984 and Spring of 1985.

First year teachers rated their preparation for classroom and laboratory instruction the highest (mean = 3.81) using the scale of 1 = unprepared and 5 = very well prepared. Perceived preparedness for conducting adult education programs was rated the lowest (mean = 2.99). For all areas, first year teachers rated their preparation between the categories of acceptable and well prepared.

First year teachers perceived on-the-job/self study as making the highest contribution toward preparedness (mean = 3.56) based on a scale of 1 = no contribution to 5 = very high contribution. Yet, regression analysis revealed that the perceived contribution of university agricultural education courses was an important factor in teacher preparation. Sixty-one percent of the variance in perceived preparedness was explained by the perceived contribution of university agricultural education courses.

Borne, C. J., Moss, J. W. (1988). Preparedness for teaching vocational agriculture: Perceptions of first year teachers. Baton Rouge: Louisiana State University.

The purpose of this study was to determine first year teachers' self-perceived preparedness for teaching vocational agriculture.

Data collected were obtained from questionnaires returned by 59 first year teachers, who were involved in the agricultural education

student teaching programs in the AATEA Southern Region during the Fall of 1984 and Spring of 1985.

First year teachers rated their preparation for classroom and laboratory instruction the highest (mean = 3.81) using the scale of 1= unprepared and 5 = very well prepared. Perceived preparedness for conducting adult education programs was rated the lowest (mean = 2.99). For all areas, first year teachers rated their preparation between the categories of acceptable and well prepared.

Southern University and A & M College, Baton Rouge

Egbe, J. N. (1989). The use of microcomputers in vocational agriculture programs in Louisiana. Master of Education thesis, Southern University and A & M College, Baton Rouge.

The major purpose of this study was to assess the use of microcomputers in vocational agriculture programs in Louisiana. More specifically, the investigation was intended to: 1) determine the extent microcomputers are being used in agricultural education programs; 2) determine the hardware and software inventory that agricultural teachers use for instruction purposes; and 3) determine the importance of microcomputers in agricultural education programs as perceived by teachers when grouped according to demographic characteristics.

Data collection was accomplished through a survey instrument mailed to 120 agricultural teachers from a population comprised of 240 agricultural teachers in a statewide study. The simple random sampling procedures was used in this investigation. Cronbach's alpha was used to test the reliability of all scaled items on the questionnaire and the overall reliability coefficient was 0.80. Statistical analysis used in the study included frequency, percentage, means, and analysis of variance with the Scheffes' test.

The major findings of the study revealed subject matter and basic printing software programs seemed to be the most used computer programs by teachers and students. Networking, graphics and plotter programs were observed to be the least used computer programs. It was noted that agribusiness and agricultural mechanics software programs were observed to be the most used computer programs for instruction, whereas soil science and forestry software programs were observed to be least used for instruction.

It was concluded that the majority computers in the agricultural education programs were Apple II computers (65 percent) followed by TRS and IBM personal computers.

Hosseini, S. F. (1988). Perceptions of selected farmers and extension officers toward agricultural extension programs in rural areas of Iran. Master of Education thesis, Southern University and A & M College, Baton Rouge.

The primary purpose of this study was to assess the perceptions of selected farmers and extension officers toward agricultural extension programs in rural areas of Iran. More specifically, the study was intended to: 1) determine the effectiveness of the agricultural extension service in planning programs as perceived by field officers and farmers;
2) determine the effectiveness of evaluating the agricultural extension programs as perceived by field officers and farmers; 3) determine the effectiveness of methods used in agricultural extension programs as perceived by field officers and farmers; and 4) determine the demographic characteristics of field officers and farmers when grouped with selected variable.

The selected population used in this investigation was comprised of 400 agricultural extension officers and 400 farmers located in the southeastern rural areas of Iran. Data collection was accomplished through a questionnaire mailed to 100 agricultural extension officers and 100 farmers using the simple random sampling. Statistical analysis used in the study included frequency, percentage, means, and variance with the Scheffes' test. The Cronbach's alpha was used to test reliability of the questionnaire scaled items and the overall reliability coefficient was 0.95.

The major findings of this study indicated electric power facilities, construction, and machinery calibration seemed to be the most important educational programs desired by the field officers and farmers, whereas landscaping surveying and production records were observed least important. Local meetings, demonstrations and farm visits were observed as the most effective teaching methods in agricultural extension programs. The state meetings, area meetings and television programs were observed as the least effective teaching methods.

It was concluded that several factors influenced the perceptions of the respondents toward agricultural education programs, namely: 1) respondents level of education; 2) use of agricultural education programs; and 3) extent of employment in agricultural extension programs.

Wright, S. E. (1989). Identification of factors which contribute to the post-secondary educational attainment of male military enlistees: Evidence from the national longitudinal study. Doctor of Philosophy dissertation, University of Maryland, College Park.

The purpose of this study was to identify factors which contribute to the post-secondary educational attainment level of male military enlistees.

The research problems were:

1. When socioeconomic status/family background factors, educational aspiration factors, educational/academic performance factors and military factors were considered separately, how did each factor relate to the post-secondary education attainment of male military enlistees.
2. When socioeconomic status/family background factors, educational aspiration factors, educational/academic performance factors, and military factors were considered jointly, how did they relate to the post-secondary educational attainment of male military enlistees?

The sample for this study was taken from the National Longitudinal Study (NLS). The selected 845 male sample was tracked from the NLS 1972 base year survey through the 1979 fourth follow-up survey.

Multiple regression analysis was the analytical tool selected for analyzing the data within this study. Besides the overall significant relationships between socioeconomic status/family background, educational aspiration, educational/academic performance, military factors, and educational attainment, the results of this investigation revealed that a number of individual independent variables were important predictors of educational attainment. It was found that mother's education, father's occupation, high school grade point average, student aptitude, student high school program, reason for entering the military -- to receive in-service college education, and educational plans after military service -- college were individually all significant predictors of educational attainment of male military enlistees.

This study must acknowledge several limitations in reference to the interpretations of these findings. The length of the longitudinal period, if longer, could have possibly generated a different set of results. Perhaps those enlistees who left the service after one enlistment achieved greater levels of educational attainment. This study was not able to test this phenomena. Women were not included in this study. In any further analysis, women should be analyzed in terms of their factor relationships with educational attainment and military service.

There are several implications for the utilization of this study's findings. First and foremost is the credence it lends to previous studies which have addressed educational attainment of military enlistees. Second, the military should use more factors than the Armed

Forces Vocational Aptitude Battery (ASVAB) and a high school diploma as indicators for predicting the likelihood of trainability and success in the military. To increase the probability of selecting that "Quality" recruit or the recruit who has the ability to learn, questions concerning mother's educational attainment level should be added to the military's pre-enlistment evaluation criteria.

Thuemmel, W. L. (Ed.). (1989). It's your world: Learning activities for grades 4-6. (Massachusetts Agriculture in the Classroom, Inc., Funded Project). Amherst: University of Massachusetts.

The purpose of the project was to develop a set of specific lessons or learning activities in science and nutrition and social studies for Massachusetts elementary teachers, grades 4-6, to further agricultural literacy among their students.

The project was conducted as a result of joint planning by the project director and Massachusetts Agriculture in the Classroom (MAC), Inc. This effort was a sequel to development of the Massachusetts Agriculture in the Classroom Teacher Resource Book by Barbara Garner Koech in 1985. Dr. Koech's pioneering efforts were well appreciated by educators in Massachusetts and acclaimed by Agriculture in the Classroom leaders at the national level. However, after four years and limited teacher training resources, it was decided to update and revamp the Teacher Resource Book by restructuring the learning activities into a more concise and active learning format. It's Your World is the completely revised new edition and contains 39 learning activities.

The project director was assisted by two former elementary teachers who served as project specialists in developing the various learning activities. The lessons focus on agriculture and agricultural products from all geographic regions of Massachusetts and reflect a nationwide trend to include agriculture and agricultural issues in classroom instruction in a meaningful and integrative way.

The learning activities were designed to minimize the amount of teacher time required to prepare individual lessons. They are active in nature, flexible, and address major concepts in science and nutrition and social studies while creating an awareness of the food and fiber system. All materials were field tested by selected elementary teachers and agricultural industry representatives. The learning activities were printed and assembled in three-ring binders. Elementary teachers are introduced to the teaching materials through workshops sponsored by MAC, Inc.

MICHIGAN

Elliot, Jack. (1989). Determining the future direction of agricultural education in the Tuscola Intermediate School District. (Staff Study). Michigan State University, East Lansing.

The purpose of this study was to determine the future direction of agricultural education in the Tuscola Intermediate School District (TISD).

A survey was mailed to all Tuscola County school board members and counselors, all "in-county" and "out-of-county" agribusiness leaders, and a random sample of Tuscola County farmers. Their responses provided information concerning agricultural education curriculum, methods of delivery, potential partnerships, and student outcomes.

Education in and about agriculture is important in Tuscola County. New methods of offering agricultural education are recommended. Creative scheduling and bussing are possibilities as are contemporary curriculum changes. Specifically, courses that feature agribusiness and agriscience concepts are suggested. Granting science credit for appropriate courses was highly emphasized.

Berihun, N. (1989). A proposed educational program in irrigation water conservation for the arid lands in Ethiopia, Somalia and Sudan. MEd Integrating Paper. University of Minnesota, St. Paul.

Ethiopia, Somalia and Sudan for the last twenty years have been victims of periodic droughts and political instability. As a result, millions of people in rural areas in these countries have been starving to death. Rural farmers have limited available water. This limited available water is used improperly in the farm lands by the farmers. These farmers need an educational program on farm water management.

The purpose of this study is the possibility of implementing irrigation water conservation educational program at minimum possible costs to these governments. Current engineering technology on drip irrigation proved to be farm water savings in many countries. The advantages of this system are the direct application of water to the root zone of the plants. Plants utilize as much water on drip irrigation as they do on other methods, but with drip irrigation water losses due to deep percolation and evaporation are minimized. Drip irrigation system is applied to a wide variety of soils under many topographic conditions. This system will be helpful to the rural farmers of these countries, whose livelihood depends on agriculture, to make maximum use of available water. One of the mechanisms of implementing this educational program at low cost to these countries is by linking the program with various government agencies and available organizations. This systematic plan will help the program to have access to equipped buildings, facilities and most important the access of professionals in irrigation and other agriculture related areas and personnel already on salaries.

Ngware, S.S. (1989). Tanzania's educational reforms: 1977-1987, policy analysis and implications for secondary education. Doctor of Philosophy thesis, University of Minnesota, St. Paul.

The purpose of this study is to understand the nature of and need for reforms in Tanzanian secondary education in the period between 1977 and 1987 and analyze its policy implications for the future. Since gaining political independence in 1961, Tanzania has taken hold steps to reform its educational system to conform with the country's changing needs and aspirations. The overall question addressed by the study focused on the relationship between educational reforms and the country's political and socio-economic development philosophy. The underlying assumption is that educational reforms are neither value-free nor are they ends in themselves, but should be vigorously subjected to a rigorous analysis of fundamental questions about their relationship to the entire social fabric.

The "qualitative" approach was used to search for themes or patterns which exist in the realm of educational reforms and policy in

Tanzania. The philosophical roots of qualitative methods emphasize the importance of understanding the meanings of human behavior and the political socio-economic and cultural context of the problem being investigated. Therefore, open-ended interviews and open-ended questionnaires were used. Forty-five people were interviewed and 143 others completed the questionnaires. Records/documents were also examined to collect additional information on the problem. The findings of the study included the following: (a) It is necessary to develop a clear understanding of the social, economic and political context in which educational reforms are operating, (b) It is equally important to note that solutions to the crisis in education have to be sought beyond the education sector, (c) The study has also shown that educational reforms do not substitute for major reforms in society.

Polgreen, J.K. (1989). An image of the future for a rural Kenyan community through ethnographic delphi futures research. Doctor of Philosophy thesis, University of Minnesota, St. Paul.

This study is an attempt to explore the usefulness of one futures research method - Ethnographic Delphi Futures Research (EDFR) - as the primary research tool in the development planning process for a single community in a developing nation. The overall study is a critique of research methodology based on a small field study. The present field study was a futures research exercise for developmental related education and training. It was conducted in the community of Mtepeni, Kenya.

The overall question addressed by the study is whether, in a Third World development setting, the Ethnographic Delphi Futures Research is effective as a means of obtaining 'true' results, efficient in application, and capable of empowering client communities to take action. A set of assumptions were developed based on EDFR and a set of criteria were established against which to judge methodologies in the development setting.

Interviews of twenty respondents representative of the community yielded a list of statements about the future. This list was presented to the respondents in three successive Delphi rounds. A well focused image of the future was produced.

An ethnographic overview of the community was also undertaken through informant interviews and participant observation. Comparison of the overview with the Delphi was made.

Ten criteria were selected to test the effectiveness, efficiency, and empowerment capability of EDFR. The study was examined against these.

The Mtepeni study has demonstrated the value of using a futures oriented research method along with some sort of group process in a Third World project development setting. The Mtepeni study has demonstrated that Ethnographic Delphi Futures Research is future oriented, positive, participant 'owned', and because of the above, it is motivational and empowering. The method has also been shown to be capable of dealing with complex whole system issues and to yield a good

representation of 'truth' as seen by participants. The method appears to have the flexibility to allow modifications of the future image as the 'real' future unfolds.

Walkinshaw, C.A. (1989). Experiential learning models for agricultural education. Master of Arts Plan B Paper. The University of Minnesota, St. Paul.

The purpose of this paper was to provide a comprehensive review of experiential learning for agricultural education: (a) review the roots and history of experiential learning theory; (b) present, contrast, and discuss experiential learning models; (c) identify design considerations for experiential education programs; and (d) discuss the implications of the material reviewed for an undergraduate degree program in agricultural education.

Contrasting experiential learning models exist. Although each is unique, most emphasize that: (1) Experience is the base of all learning; (2) Learning requires active engagement with experience; (3) Reflection is a critical learning stage; (4) The learning process follows sequential stages. These include some combination of: (a) focus-exposure to experience, (b)action-participation, (c) reflection, (d) theoretical generalization, (e) experimentation-testing, and (f) support-feedback.

Existing literature and research show that experiential learning: (a) bridges the gap between theory and practice; (b) is process and content oriented; (c) is appropriate and applicable to practical and formal classroom settings; and (d) teaches skills that are the base of personal and professional competence i.e., self-directed learning and personal self-development.

An experiential based agricultural education undergraduate program would: (a) require sponsored internships and field experiences; (b) integrate field experiences with concurrent theoretical and post-experience classroom instruction, (c) incorporate experience, reflection, and active experimentation into all practical and theoretical learning activities, and (d) provide ongoing opportunities for the active experimentation, testing, and dissemination of new learning.

MISSISSIPPI

Giesemann, J. T. (1988). An evaluation of the educational and other aspects of participation in the GOSSYM-COMAX system. Doctor of Education dissertation, Mississippi State University, Mississippi State, Mississippi.

This study evaluated the educational and other aspects of participation in the GOSSYM-COMAX System. This system included training, distribution, and support in the use of the GOSSYM-COMAX computer program, a combination of: GOSSYM, a cotton growth model; and COMAX, a cotton management expert system.

The study was descriptive and exploratory in nature and used descriptive survey and illustrative case study designs. The subjects for the study were the cooperators that actively used the GOSSYM-COMAX Program during 1987.

A researcher-developed mail survey instrument was used to gather quantitative and qualitative data. Illustrative case studies of two cooperators were used to extend and enrich data collected from the survey.

The content, construct, and face validity of the survey instrument were assessed by a panel of expert judges and a pilot test. Reliability of the instrument was assessed by triangulation with extension agents and by random verification of survey responses.

Surveys were returned from 36 cooperators in 12 of the 13 states involved in the program for a return rate of 77%. A wide variation on the demographic and situational characteristics observed was obtained. The characteristics of the cooperators were similar to those of early adopters.

Many uses that were made of the program were identified; primarily in the areas of irrigation, fertilization, and crop termination. Other areas included planting practices, insect control practices, weather data, and soil factors.

The primary educational benefit identified was an improvement in knowledge relating to the growth and development of the cotton plant. The program appeared to be very motivating educationally and led to increased knowledge in many areas. The educational benefits achieved resulted both directly and indirectly from the use of the program.

Isoh, A. D. (1989). Selected program development concepts, usage and training needs as perceived by extension workers in Cross River and Akwa Ibom States of Nigeria. Doctor of Education dissertation, Mississippi State University, Mississippi State, Mississippi.

The purpose of this study was to investigate the extent to which selected program development concepts are generally used by extension workers and the perceived level of training each extension worker needs in developing extension programs for adult farmers as held by local

government extension workers in the Cross River and Akwa Ibom States of Nigeria. One hundred ten government extension workers in the two states made up the population for this study. Data were collected by using a questionnaire. Through literature review a list of 48 selected program development concepts was compiled and grouped into three main program development categories: planning, implementation, and evaluation. Respondents were asked to rate the listed concepts regarding extent of use generally, and the training each extension worker needed on a Likert type scale of 1 = None, 2 = Little, 3 = Some, 4 = Much, and 5 = Very Much. A 100% response rate was achieved and data were analyzed using frequencies, percentages, means, standard deviations and analysis of variance.

Findings revealed that all 48 items, or 100 percent were perceived as used "Little" to "Some," and the 110 subjects needed training "Some" to "Much" in the 48 selected program development concepts. It was concluded that a majority of the subjects used most of the program development concepts "Some," and needed much training in the use of these concepts. Findings also indicated that there were no differences in the perceived extent of use of the program development concepts according to age, position title, number of years employed, and educational level.

Lee, J. S. & Westrom, L. E. (1989). Secondary agriculture teacher health care experiences and concerns. (Staff Study). Mississippi State University, Mississippi State, Mississippi.

The purpose of this study was to determine the health care experiences and concerns of secondary agriculture teachers in the United States. Further, the study investigated factors in the school workplace that may contribute to health status.

The data were collected using a systematic sample of 502 teachers of the national population of 12,053 teachers. A data sample of 303 was obtained. The Educator Health Care Assessment Instrument (EHCAI) was developed and used to obtain health information in nine areas: injuries, surgery, dental conditions, emotional or psychosomatic conditions, communicable diseases, orthopedic conditions, systemic conditions, pregnancy/child care, and vision/hearing conditions. The areas were further subdivided into a variety of health concerns/problems.

Secondary agriculture teachers were found to have a wide range of experience and concerns. The ten most frequent problems were: colds (experienced by 79% in one year), job stress (52%), fatigue (48%), influenza (39%), headaches (37%), personal stress (34%), teeth problems (27%), eyesight problems (26%), respiratory problems (25%), and depression (24%). The problems causing teachers to miss school were: (in descending order) influenza, colds, circulatory problems, genitourinary problems, major surgery, job stress, minor surgery, maternity/paternity needs, personal stress, child care, laboratory injuries, and digestive problems.

It was the perception of 42% of the respondents that school environment affected their health. The greatest concerns were: laboratory noise level (25%), laboratory air quality (23%), laboratory temperature (17%), instructional chemicals (14%), classroom temperature (14%), and laboratory acoustics (12%). School administrators are perceived as having little concern for teacher health.

Fifty-six percent of the teachers were overweight, with 28% having irregular meals and 17% improper nutrition. Twenty-seven percent indicated that they used tobacco. Only 20% of the schools had wellness programs. A weak relationship existed between health status and school reform.

Salleh, R. M. (1989). A study of the competencies required and the training needs of the school food service supervisors in Mississippi. Master of Science thesis, Mississippi State University, Mississippi State, Mississippi.

The purpose of this study was to investigate through a mailed questionnaire the various competencies required and the perceived training needs of the public school food service supervisors in Mississippi.

Analysis of the data revealed that of the 140 responding public school service supervisors, 84.0% were employed as food service supervisors, 13.0% worked as food service administrators and food service directors. Of the respondents, 27.0% had graduate degrees, 32.0% had majored in Home Economics, 94.0% were female, and 64.0% were less than 50 years of age.

Fifty percent of the respondents indicated that they had less than 10 years experience in the food service area, 68.0% had worked as food service supervisors for less than 10 years, and 61.0% planned to be life-long food service supervisors.

The majority of the respondents (83.0%) were interested in additional course work and in getting university credit on the course work. They would prefer short program workshops of one to two days.

Based on analysis of the data collected, it was found that the competencies required by the school food service supervisors were slightly different from their training needs.

The school food service personnel expressed interest in credit courses, short workshops for one to two days, summer workshops for one to two weeks, evening classes, and advanced degree programs. Periodic follow-up surveys of the respondents could assist the faculty at Mississippi State University in creating new curriculums to meet the needs of the school food service supervisors, particularly in Mississippi.

Suvinai, R. (1989). Rice seed technology competencies needed and possessed by the agricultural extension workers in the western agricultural extension region of Thailand. Master of Science thesis, Mississippi State University, Mississippi State, Mississippi.

The primary purpose of the study was to determine the competency levels needed and competency levels possessed in selected rice seed technology knowledge, skills, abilities, and understandings by agricultural extension workers in the Western Agricultural Extension Region of Thailand. A secondary purpose was to determine the relationship of educational level, major area of study, age, length of tenure and current job responsibilities of extension workers to the levels of competency needed and levels of competency possessed in rice seed technology. All 146 of the agricultural extension workers at the sub-district level of three provinces in this region where rice is the major crop were surveyed. A 100% response rate was achieved.

A questionnaire comprised of two sections (competency levels needed and possessed, and demographic data) was used in the study. Data were collected at the fortnightly meetings in June, 1988.

It was perceived that a medium to high level of competence was needed for each competency by agricultural extension workers in performing their duties. Extension workers perceived possession of low to medium competency levels in each competency. Discrepancy scores were determined by subtracting the mean perception ratings of competency levels possessed. The scores were positive for all competencies.

The majority of the respondents were between 21-40 years in age and had more than five years experience in agricultural extension. Most of the respondents completed a five-year curriculum of vocational education or higher, with a major in "Agricultural Extension" and "Plant Production or Plant Science." In addition, most of the respondents were responsible for rice and more than two other crops in their area, and were also responsible for up to 2,000 farm households. There were no practical relationships between biographical data and both perceived competency levels needed and competency levels possessed.

MISSOURI

Birkenholz, R. J. & Stewart, B. R. (1989). Educational technology in the secondary agriculture program. (Staff Study). Columbia: University of Missouri.

The purpose of this project was to assess the extent to which instructional technology has been adopted and utilized in secondary programs of agricultural education in the United States. More specifically, this project was designed to fulfill the following objectives: (1) to identify and document the types and quantity of instructional technology available in high school agricultural education programs; (2) to assess the current use of instructional technology in high school agricultural education programs; (3) to ascertain future plans for using instructional technology in high school agricultural education programs; (4) to ascertain the instructional technology needs of high school agricultural education programs in terms of equipment, software, curriculum materials, and on-line computer services; and (5) to identify barriers which inhibit greater use of instructional technology in high school agriculture programs.

The videotape player appears to be the audio-visual equipment which teachers plan to use most in the future for group instruction. Therefore, future curriculum development efforts should incorporate videotape supplementary programs to enhance instruction in secondary agriculture programs.

Microcomputers and printers appear to hold the greatest promise for use in program administration and for individualized instruction. Interest in using microcomputers for group instruction is relatively high but secondary to the VCR.

With relatively little interest in microcomputer modems, it is apparent that teachers have yet to embrace information transfer via microcomputer telecommunications. However, taking steps to overcome funding and expertise limitations may encourage greater use of this and other technologies as they become available.

Johnson, D. M. (1989). Agricultural mechanics laboratory management competencies: Perceptions of Missouri agriculture teachers concerning importance and performance ability. Doctoral dissertation, University of Missouri-Columbia.

The purpose of this study was to ascertain perceptions of Missouri secondary agriculture teachers concerning importance and performance ability relative to 50 agricultural mechanics laboratory management competencies.

The population included all Missouri secondary agriculture teachers primarily responsible for managing an agricultural mechanics laboratory (N = 240). Instruments were mailed to a random sample of 200 teachers.

The respondents perceived that 49 (98%) of the competencies were of average or greater importance. Mean weighted discrepancy scores ranged from -1.036 to 3.668. Forty-eight (96%) of the competencies received positive mean weighted discrepancy scores.

Missouri agriculture teachers and the agricultural mechanics experts placed significantly different importance on three of the five factors. The experts placed higher importance of the Program Management and Instructional Management and Record Keeping factors while the teachers placed higher importance on the Facility and Equipment Repair factor.

The following conclusions were formulated: (a) the competencies included in this study are important for effective management of the agricultural mechanics laboratory; (b) both the experts and the agriculture teachers perceive safety related competencies as being highly important; (c) Missouri teachers need additional education in laboratory management, especially in the area of safety; (d) laboratory management educational needs vary among Missouri teachers; and (e) Missouri teachers have laboratory management priorities which are congruent with the priorities of agricultural mechanics teacher educators.

Linhardt, R. E. & Osburn, D. D. (1989). Research on induction year teaching. (Staff Study). Columbia: University of Missouri.

The purpose of this investigation was to examine the experiences/problems of beginning teachers entering the teaching profession. Particular attention was devoted to identifying factors facilitating "successful" entry. Also, information from experienced teachers, serving as mentors, and supervising principals will be assessed to provide their perspective on teacher preparation and induction activities.

The survey of the 1988 beginning teachers was designed to collect data in a number of areas. However, the most important area related to the beginning teachers' perception of their inservice needs and how those needs could enhance their professional effectiveness. For example, the inservice need that received the most support was the need to receive training on techniques designed to improve the motivation of students.

The following is a ranking of the nine most important inservice needs ranked in the order of importance: (a) I need training on techniques to improve the motivation of students. (b) I need training to improve my classroom discipline techniques and strategies. (c) I need training on how to effectively individualize instruction for students (not students with learning disabilities). (d) I need training that would enhance my ability to work with students who have physical and/or learning disabilities. (e) I need training to improve my abilities in evaluation techniques and assessment of students' work. (f) I need training to increase my knowledge and use of instructional resources and materials. (g) I need training to improve my lesson planning activities. (h) I need training on how to cope and work

effectively with matters over which I have little control (insufficient materials and supplies, inadequate school equipment, and heavy teaching loads). (i) I need training on how I might improve my interpersonal skills and relationships (with other colleagues, parents, and school administrators).

Thomas, D. C. (1989). Performance based evaluation of the chief executive officer. Doctoral dissertation, University of Missouri, Columbia.

The purpose of this study was to identify and validate a set of performance based evaluation criteria which could be used in the evaluation of chief executive officers of agricultural cooperatives.

The sample consisted of the 113 largest agriculture cooperatives. The chairperson of the board of directors and the chief executive officer of each of the organizations were asked to complete a survey instrument containing 24 activities upon which to evaluate performance. Respondents were asked how important it was for the chief executive officer to engage in the activity in order to be effective and to indicate the need for improvement in the activity by the current chief executive officer.

The analysis of the data revealed: (a) All 24 activities were found to be important. (b) Chairpersons of the board perceived almost all of the activities as being more important than did the chief executive officers. The difference was significant for four activities: day-to-day operation, appropriate budget, appropriate accounting, and professionalism with personnel. (c) Chief executive officers perceived more need for improvement on almost all of the activities. The difference was significant for four activities: organizational planning, personnel recruitment, performance standards, and professional growth. (d) Chairpersons of the board and chief executive officers were in general agreement about the adequacy of the methods being used to evaluate the chief executive officer. (e) Neither rating of importance nor need for improvement by the chief executive officer were found to be strongly related to the chairperson's experience or age.

Ward, H. D. (1989). Academic basic skills for vocational education as perceived by students, parents, teachers, and employers. Doctoral dissertation, University of Missouri-Columbia.

The purpose of the study was to ascertain the perceptions of students, parents, teachers, and employers as to which academic basic skills the groups perceived to be prerequisite for entry into vocational programs and which academic basic skills should be an integral part of the vocational curriculum. The study also attempted to ascertain if a difference existed between the perceptions of selected vocational teachers as to which academic basic skills should be prerequisite for entry into vocational programs.

Three area vocational technical schools in Missouri participated in the study. The purposive sample for the study consisted of 520 students, 186 parents, 37 teachers, and 90 employers.

A survey instrument was developed using a basic skills list furnished by the Missouri Department of Elementary and Secondary Education to area vocational technical schools participating in a basic skills project.

It was concluded that: (a) Students, teachers, and the parents and employers that responded in these districts believe that academic basic skills should be prerequisite for entry into vocational programs. (b) Adult groups are stronger in their perception of academic basic skills as prerequisite for entry into vocational programs than are students. (c) There is not a consensus among students, parents, teachers, or employers that academic basic skills should be taught as an integral part of the vocational education curriculum. (d) Degreed and non-degreed vocational teachers believe rather strongly that academic basic skills should be prerequisite for entry into vocational education programs.

MONTANA

Ballard, J. J. (1989). Utilization of the Myers-Briggs type indicator in developing effective inservice programs for Montana vocational agriculture instructors. Master of Science thesis, Montana State University, Bozeman.

The purposes of this study were to determine the interrelationship of personal temperament style to preferred approaches to learning and to preferred teaching techniques for inservice education, and to determine how to package specific curriculum materials for use by Montana vocational agriculture instructors.

Data were collected through the use of the Myers-Briggs Type Indicator (MBTI) and a second questionnaire designed by the researcher to determine the preferred teaching techniques and packaging of curriculum materials. All of Montana's 74 vocational agriculture instructors were surveyed. The return rates were 89% for the MBTI and 69% for the questionnaire. The responses from all questions which were correctly completed were included in the data. Data were collected in four areas: (1) preferences for learning, (2) choice of instructional methods, (3) choice of instructional materials, and (4) choice of learning methods. Means, frequencies, and percentages were utilized in the analysis of the data.

Analysis of the data revealed the majority of Montana vocational agriculture instructors had learning styles consistent with Keirsey and Bates' (1984) prediction for teachers of agriculture. However, when compared with Foster and Horner's (1988) findings, there was a larger than expected proportion of other learning styles within the profession. There were notable differences in preferences for learning within and among learning styles, indicating Montana vocational agriculture instructors have definite preferences when learning. These preferences for learning are to: be actively developing skills while working with something tangible, determine how things work, and use reasoning abilities in conjunction with demonstrations and discussions to obtain usable information. When limited to eight instructional methods choices, Montana vocational agriculture instructors preferred lecture with discussion and/or overheads when learning about new curriculum areas. Workshops were preferred to self- study and the choice of instructional materials was curriculum area specific. From these data it can be concluded that learning preferences should be included in the planning and conducting of inservice education to ensure learning is maximized.

Carpentier, D. R., (1989). New directions for agriculture education in Montana and North Dakota. Master of Science thesis, Montana State University, Bozeman.

The purpose of this study was to determine how vocational agriculture instructors, high school students, and school administrators

from different sized communities perceive the recommendations for vocational agriculture programs proposed by the 1988 study of the National Research Council.

Data for this study were gathered by a questionnaire sent to all secondary schools in Montana and North Dakota with vocational agriculture programs. Usable responses were received from 36 instructors, 157 students, and 25 administrators in Montana and 44 instructors, 221 students, and 37 administrators in North Dakota. Data were gathered in four areas: (1) reaction to the present amount of time devoted to nine identified curriculum areas, (2) perception of the amount of time that should be devoted to those areas in three years, (3) relative importance of the identified curriculum areas, and (4) reaction to 10 recommendations gleaned from the 1988 National Research Council study.

Means were analyzed using the t-test at the .05 level of significance. Real limits were established and notable differences were utilized for interpreting some data.

Analysis of the data revealed the present vocational agriculture curriculum in Montana and North Dakota is composed primarily of five curriculum areas: agriculture mechanics, animal production, agribusiness, crop and food production, and the FFA. The four areas that received considerably less time were high technology, horticulture, global agriculture, and forestry and natural resources. Students and administrators in both states indicated the time allotted to high technology and global agriculture was inadequate. Instructors, students, and administrators in both states felt that three years from now, instructional time for agribusiness, high technology, and global agriculture should be increased. The nine curriculum areas were considered "important," with the exception being horticulture which was classified "somewhat important." The data indicate all groups expressed different levels of agreement with the National Research Council recommendations. The FFA was one exception; however, all groups disagreed with changing the name of the FFA, its symbols, and its ceremonies.

From the data it can be concluded that, for the most part, instructors, students, and administrators support the findings of the 1988 National Research Council study.

Connor, J. F., (1989). Perceptions of county agents and 4-H leaders toward fund-raising activities by the Montana 4-H Foundation. Master of Science thesis, Montana State University, Bozeman.

This study determined the perceptions of county agents and 4-H leaders toward fund-raising activities by the Montana 4-H Foundation.

A randomly selected sample of 429 4-H leaders and 76 county agents employed in Montana were sent questionnaires in February 1989. The instrument provided responses in degrees of agreement or disagreement with statements related to current and potential fund-raising activities conducted by the Montana 4-H Foundation, as well as a demographical

profile of respondents. A final return rate of 85.5 percent for county agents and 34 percent for 4-H leaders was obtained.

It was concluded that the Foundation has been ineffective in communicating its purpose to county agents and leaders. County agents and leaders should not be asked to make annual contributions of a specific dollar amount. The Foundation should use the following fund-raising programs: brand an animal; bank, silver dollar, and penny campaigns; memorials; sponsorships; life insurance policies; and bequests and endowments. There was disagreement between county agents and 4-H leaders on the issue of employing an executive director. Incentive programs should be developed for younger members. A combination of state and county fund-raising activities should be directed at corporations, individuals, and foundations. The funding level for existing Foundation supported programs is adequate. County agents and leaders differ in their level of agreement or disagreement on several issues. Most 4-H leaders have a high level of education.

Recommendations for the Foundation include: Information about the Foundation needs to be included in county agent and leader training programs, new fund-raising programs should be developed to replace direct mail solicitations and door-to-door sales programs, trips and awards for member and leader incentives and leadership development should be continued, a public relations campaign aimed at corporations and individuals should be developed, development of a newsletter is recommended, and a one-time, multi-million dollar campaign should be conducted in the immediate future.

Khatab, M. (1989). An extension evaluation study of the project of new land utilization by graduates in the Northern an Southern Tahrir, Beheira Governorate, Egypt. PhD dissertation, Montana State University, Bozeman.

The purpose of this study was to evaluate two approaches of distributing reclaimed land in the Southern and Northern Tahrir Sectors of the Beheira governorate of Egypt. Two objectives were developed to meet the purpose of the study.

The population for the study included 160 graduates from the Southern Tahrir Project and 63 graduates from the Norther Tahrir project. A systematic random sampling technique was used to draw the sample units from each project. Twenty pairs of null and alternative hypotheses were formulated. An interview questionnaire was used to collect data from the graduates. Response frequencies and percentages, means, standard deviations, box plots, t-test, Spearman Rank Correlation test, chi-square, Pearson Correlation Coefficient test, and multiple regression tests were used to analyze the data.

It was concluded that the underlying philosophy of the project of new land utilization by graduates did not serve as the basis for preparing clear working objectives. The project goals were not clearly defined and totally measurable. Most of the positive predictors of agricultural utilization effectiveness by graduates were different in the Southern Tahrir project than the positive predictors in the Northern

Tahrir project, but the progress inclination score and existing attitude score were positive predictors in both projects. The results indicated that the effective factors for increasing the effectiveness of agricultural utilization by graduates in the Northern Tahrir project. However, the results showed that the graduates' attitude toward the project and their progress inclination should be recognized as effective factors for increasing the effectiveness of agricultural utilization by graduates in both projects.

NEBRASKA

Dillon, R. D. (1989). A comparison of perceptions of secondary agriculture teachers, superintendents, principles, and school board presidents on barriers which may impede change in secondary agricultural education programs. (Staff Study). University of Nebraska-Lincoln, Lincoln.

The purpose of this study was to compare the perceptions of four groups, namely secondary agriculture teachers, principals, superintendents, and school board presidents on barriers which may impede change in secondary agricultural education programs.

A 57 item instrument, based on previous research conducted by Fardig in Florida, was sent to random samples of respondents in 50 Nebraska secondary schools. A five point forced response scale of 1, strongly agree, to 5, strongly disagree, was used in scoring each of the 57 items. Responses were received from 50 agriculture teachers, 49 superintendents, 48 principals, and 38 school board presidents.

The analysis of variance procedure was used to determine if significant differences existed among groups for each of the 57 items and in the 11 categories. An alpha of .05 was used. In cases where significance was found, the Tukey HSD procedure was used to denote pairs of groups significantly different.

Significant differences were found among respondent groups in seven of the eleven categories. Agriculture teachers believed 25 of the statements were barriers to change, while principals believed 11 were barriers, superintendents believed 7 were barriers, and school board presidents believed 7 were barriers to change.

The primary recommendation made from the study was to conduct further research to determine how school districts in Nebraska have confronted and solved the barriers identified.

NEW YORK

Davis, T. H. (1988). A resource guide to the philosophical background and organization of 4-H clubs. Master of Professional Studies Project, Cornell University, Ithaca.

The number of 4-H clubs members has dropped abruptly in the past decade. This project sought to provide those who work with 4-H clubs with a resource guide to strengthen the organization and increase membership.

An expert advisory panel provided direction on what types of information should be in the guide. Inquiries for materials and information were mailed to 4-H extension leaders in all fifty states. These materials were reviewed and selected as provided from the sources or in modified form. Releases for the publications were obtained from the original sources. Additionally, selected information was synthesized and summarized by the author and compiled for publication. Draft versions of the publication were periodically reviewed by the panel of experts. The project was partially financed by the New York State 4-H Office and was developed in conjunction with activities of the 4-H Professional Improvement Committee.

This guide contains more than four hundred pages on topics such as "why 4-H clubs", "contacting prospective club leaders/members", "volunteerism" and "recruiting leaders". The assortment of materials provide various options to meet specific needs. They are suitable for duplication and immediate use by extension agents, adult leaders and member leaders.

Dormody, T. J. (1989). Student/teacher participatory interaction during group problem solving in secondary school agricultural education. Doctoral dissertation, Cornell University, Ithaca.

In secondary school agricultural education, a group problem solving teaching strategy has been widely accepted and applied. However, little research has been undertaken to verify educational outcomes commonly associated with employing this strategy in the classroom.

This study determined student/teacher participatory interaction, student motivation to participate, and student satisfaction during naturalistic group problem solving activities. It also determined student motives to participate, student motives satisfied, and characteristics of transactional student/teacher participatory interaction manifested during the activities.

Five secondary school programs of agricultural education, from a population of 27 programs in New York State recognized as student teaching centers by Cornell University, participated in the replicated case study. Research was conducted in Basic Agricultural Skills classes that employ a statewide curriculum addressing problem solving.

One class was used as a pretest and to determine instrument reliability. Classes addressed state-mandated objectives in problem solving and solved a pretreatment group problem before attempting to solve a treatment group problem. Classes followed set research guidelines and used standardized instructional materials.

Observations of the treatment group problem solving activity were made by student questionnaire and interview schedule, teacher questionnaire and interview schedule, audiotape, and videotape. Four test school classes, including 58 students and four teachers, participated in the study.

Student/teacher participatory interaction and Grade Point had significant bivariate relationships with student motivation to participate. Quantitative and qualitative results supported transactional theories of student/teacher participatory interaction for both student motivation to participate and student satisfaction over more student or teacher-dominated theories.

At least 50% of participating students and teachers identified achievement, affiliation, autonomy, and cognizance as student motives to participate. Teachers identified deference and students identified conservance most frequently as student motives to participate.

At least 50% of participating students and teachers identified achievement, affiliation autonomy, and cognizance as motives satisfied during group problem solving.

Among characteristics of transactional student/teacher participatory interaction, students infrequently identified shared decision making, shared leadership, agreement by consensus, and mutual respect on open-ended indicators during transactional stages.

Recommendations to teachers and investigators were made based on the results.

Kriese, John Edward. (1989). Fitting and showing beef cattle. Master of Professional Studies Project Report, Cornell University, Ithaca.

The purpose of this project is to contribute to the knowledge of people involved in exhibiting beef cattle at fairs and expositions. This group includes county extension beef activity groups (4-H), students enrolled in agricultural education in public high schools (FFA), state beef breed associations for junior members, and post-secondary agricultural colleges offering an emphasis on livestock and/or beef production. The need arises from the lack of current and technically correct instructional materials on the topic of fitting and showing beef cattle.

Sources of information included were professional fitters and show persons directly involved with the exhibition of beef cattle. The two slide sets were designed for the individual with limited knowledge in fitting and showing beef cattle. The slide sets and supplemental materials present a step-by-step procedural analysis of the tasks which are performed prior to, and during, show ring competition.

Two slide sets with supportive materials constitute the project. "Fitting Beef Cattle" describes the processes involved in preparing beef cattle for show ring competition. It includes methodology on taming, training, feeding, clipping, and hair preparation techniques commonly used when preparing beef cattle for competition. "Showing Beef Cattle" includes methodology on taming, breaking to lead, breaking to show, and show ring techniques.

Taylor, S. M. Credit management for agriculture. Master of Professional Studies Project, Cornell University, Ithaca.

"Managing Credit for Agriculture" is a teaching packet designed to be used by teachers of agriculture to instruct units on the use and management of credit for agriculture. Each of the four units contains a unit overview, objectives, teaching strategies, an alphabetized vocabulary list, transparency masters, and student activity sheets in addition to text explaining key concepts. The text is organized with an outline for quick reference on the left and explanation on the right. Vocabulary terms introduced for the first time in the text are in bold print and the accompanying definitions are underlined. Formulas and examples are printed in italics. The print used for the outline reflects the hierarchy of the information. Primary factors are in bold, secondary factors are in normal print, and tertiary factors are in italics. Transparency masters are referenced by "see figure #" or "see table #" in the outline section of the text.

The four units build from the meaning and basic concepts of credit to obtaining credit, the mechanics of interest, and the management of credit. Each unit includes the introduction of new terms that are used in the subsequent units. Units one and two are appropriate for any high school grade level. Units three and four, "Interest Calculations and Repayment Terms" and "The Financial Management Road," require proficiency in basic mathematical operations including fractions and percentages. The second part of unit four, dealing with financial management measures, is for advanced students interested in a more thorough understanding of how a business's finances are evaluated for credit and management purposes. This section requires an overall understanding of agricultural production, income statements and balance sheets in order to be meaningful.

Flowers, J. L. (1989). Adoption of competency based education in North Carolina's high school vocational agriculture programs. (Staff Study). North Carolina State University, Raleigh.

The purpose of this study was to determine the extent to which competency based vocational education (CBVE) was evident in North Carolina's vocational agriculture programs and to identify factors that contributed to the adoption of CBVE in local vo-ag programs. A secondary purpose of the study was to compare the level of implementation of CBVE in vocational agriculture programs with other vocational education programs within the state.

The population for this study consisted of all high school vocational education teachers in North Carolina providing instruction in any of the seven vocational program areas who were employed during the 1987-88 academic year (N = 4,146). For the purpose of analyzing the data, vocational teachers were divided into two groups: (a) vocational agriculture teachers (N = 344) and (b) other vocational teachers (N = 3,802). A random sample of vocational agriculture teachers and a stratified random sample (stratified by vocational program area) of other vocational teachers were selected to provide data for the study. Using formulas suggested by Krejcie and Morgan (1970) 182 vocational agriculture teachers and 349 other vocational teachers were selected to represent the population.

The instrument used in this study consisted of two parts. Part I of the instrument was developed by the researcher using the model for competency based vocational education adopted by the North Carolina Department of Public Instruction. Part II of the instrument consisted of factors identified in the literature that contributed to the adoption of competency based vocational education or other instructional innovations.

Data were collected from 304 teachers, representing a 57% response rate. The following conclusions were drawn from the findings of this study: (1) The overall level of adoption of competency based vocational education in North Carolina was described by the vocational agriculture teachers as moderate. However, improvement is needed in the level of implementation of many of the key components of the state adopted competency based model. (2) The State Department of Public Instruction's and local administrators' support for CBVE have been important factors influencing vocational agriculture teachers to adopt CBVE in their local programs. A third factor influencing adoption of CBVE by vo-ag teachers is their perception that CBVE is meeting the needs of their students. (3) Vocational agriculture teachers have emphasized different components of the CBVE model than other vocational teachers as they implemented a competency based approach. They tend to place more emphasis on the pre-assessment of student skills and less emphasis on the organizing and managing of the learning environment than did the other vocational teachers.

Herring, D. R. (1989). Determination of differences in computer utilization of southern region vocational education administrators by selected demographic variables. Doctoral dissertation, Raleigh: North Carolina State University.

The purpose of this study was to determine the differences in utilization of selected computer resources of secondary vocational administrators (serving comprehensive high schools and/or area vocational centers) when grouped by age, years of vocational administrative experience, highest educational degree attained, principal area of vocational experience, number of vocational teachers served, and level of participation in selected types of computer related training (in-service activities, college-level courses, and/or continuing education courses).

The population for this study consisted of all full-time secondary vocational administrators located in the AATEA Southern Region (N = 1250). A stratified random sample, not to exceed 48% of the administrators from each state, was used to select the research sample for the study (n = 600). The survey instrument consisted of a two part, 46 item questionnaire. Part one elicited information regarding the administrator's computer and computer resource use while part two collected demographic information. A panel of experts established content validity of the instrument. After field testing the instrument, the survey was mailed to the research sample. A total of 440 respondents returned usable questionnaires for a return rate of 74%.

In addition to using descriptive statistics to describe the administrators and their computer usage, inferential statistics, one-way analysis of variance with the Scheffe' method for multiple comparisons, were used to test the hypotheses at an alpha level of .05. A computer usage score was calculated for each administrator to use in the analysis.

Significant differences were found in the overall utilization of computer resources by secondary vocational administrators in the Southern Region of the United States when grouped by: a) years of experience, b) principal area of vocational experience, c) number of vocational teachers served, d) level of participation in computer related training, e) level of participation in computer related college level courses, f) level of participation in computer related continuing education courses. No significant differences were found between the overall utilization of computer resources by secondary vocational administrators when grouped by age or highest degree level attained.

In conclusion, administrators who tended to use computers and computer resources had five or more years of experience, were more likely to have trade/industry backgrounds rather than agricultural education backgrounds, and served 40 or more teachers. Neither an administrator's age or degree level made a difference in terms of using computers and computer resources. Educational training on the use of computers and computer resources should be useful in assisting beginning administrators to organize and manage their duties.

Jewell, L. R. (1989). Predicting performance on the professional knowledge portion of the national teacher examinations. (Staff Study). North Carolina State University, Raleigh.

The purpose of this study was to determine how well the freshmen academic admission index utilized at North Carolina State University, achievement on the various portions of the Scholastic Aptitude Tests, achievement in selected academic and professional courses, achievement on the Communication Skills and General Knowledge portions of the National Teacher Examinations, and accumulated undergraduate grade point average predict student performance on the Professional Knowledge portion of the National Teacher Examinations.

The population for the study consisted of students (N = 106) who were admitted to North Carolina State University as freshmen students and who graduated from the Agricultural Education Program between July 1, 1981 and May 9, 1987. The Annual North Carolina State University Commencement Bulletins for the academic years from 1981-82 through 1986-87 were used to identify the study population and served as the frame for the study. The research sample was randomly selected based on a formula established by Krejcie and Morgan (1970) and consisted of 84 program graduates. Data for 1986 and 1987 graduates were obtained from a computerized data filing system in the College of Education and Psychology. Data for the remaining students were obtained from the students' permanent records from the Registrar's Office at North Carolina State University.

The three predictor variables, NTE-Communication Skills Test, NTE-General Knowledge Test, and required educational psychology course, together yielded a multiple correlation coefficient of .823 and represented the best prediction one could make for student performance on the NTE-Professional Knowledge Test based on the predictors studied. Based on the R^2 values, the researcher can predict approximately 68% of the variance in student performance on the NTE-Professional Knowledge Test.

Student performance on the verbal and math portions of the Scholastic Aptitude Test (SAT), their performance in required freshmen math and English courses, their freshmen academic admission index scores, and their undergraduate accumulated grade point averages does not associate highly with student performance on the Professional Knowledge portion of the National Teacher Examinations. Therefore, they should not be used as predictors for performance on the NTE-Professional Knowledge Test.

Jewell, L. R. (1989). Assessing teaching performance of vocational education teachers in the central region of North Carolina. North Carolina Department of Public Instruction. North Carolina State University, Raleigh.

The purposes of this study were to determine the effectiveness of the teaching performance of vocational education teachers in North Carolina to determine if significant differences existed between the

perceptions of vocational education teachers and those of their principals toward the effectiveness of the teaching performance of the teachers, and to determine the suitability of the state adopted teacher performance appraisal system assessment instrument for evaluating the teaching effectiveness of vocational education teachers.

The population for this study consisted of all middle and high school vocational education teachers in the Central Education Region (Region III) of North Carolina during the 1987-88 academic year (N = 843). The research sample (n = 443) was selected by drawing a stratified random sample of school systems. Analysis of the data was computed for the 176 vocational teachers for which both self-assessment and principal completed instruments were available.

The state adopted teacher performance appraisal instrument was slightly modified and used to collect research data. MANOVA procedures indicated that the assessments of the vocational education teachers and their principals were not statistically different ($p > .05$), for the following major instructional functions, "management of instructional time," "instructional presentation," "instructional feedback," and "facilitating instruction." Both the vocational education teachers and their principals felt that the performance of the teachers were "above standard" to "well above standard" for these instructional functions. Significant differences were found between the assessments of teacher performance by the vocational education teachers and their principals for the major instructional functions of "management of student behavior," "instructional monitoring of student performance," "communication within the educational environment," and "performing non-instructional duties."

The following conclusions were drawn based on the findings of this study: (1) Vocational teachers in the central region of North Carolina perceived that their teaching performance was from "above standard" to "well above standard". (2) Principals in the central region of North Carolina generally perceived that the performance of their vocational education teachers was "above standard." (3) In general, principal assessments were slightly lower than what the teachers perceived their performance to be. (4) The state adopted Teacher Performance Appraisal Instrument can be used as an adequate means for evaluating the teaching performance of vocational education teachers.

Price, L. E., & Jewell, L. R. (1989). Perceptions of secondary school administrators in the southern region of the United States toward secondary vocational agriculture programs. Master of Science thesis, North Carolina State University, Raleigh.

The purposes of this study were to determine why only a small percentage of the former state FFA officers from the southern region of the United States entered the profession of teaching vocational agriculture, to determine what the perceptions of the former state FFA officers from the southern region of the United States are toward the profession of teaching vocational agriculture, and determine if there is a significant difference between the perceptions of former state FFA

officers from the southern region of the United States who are teaching vocational agriculture and those who are not teaching toward the profession of teaching vocational agriculture.

This study was conducted using former state FFA officers (1971-1980) from Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, Oklahoma, South Carolina and Tennessee. A sample of 246 was selected from the population by using a table of random numbers.

Data were collected using a two part researcher developed instrument. The surveys were mailed along with a self-addressed, return envelope. The participants were asked to return the survey within a three week period. A follow-up survey was sent to those who did not return the first survey. One hundred forty-three or 58.13% of the sample responded to these mailings. A ten percent sample of those who did not respond to the second survey after a two week period was called and interviewed over the phone. Statistical analyses indicated that the non-respondents were not significantly different than the individuals who responded to the initial survey. Therefore, the respondents were considered representative of the study sample. Including these, 154 responses were obtained for a total of 62.60%.

No significant differences were found in the perceptions of former state FFA officers who are currently teaching and those who are not teaching toward the adequacy of the job security, administrative support, advancement opportunity, community support, working conditions, job satisfaction, sense of accomplishment, prestige in the community and working hours of vocational agriculture teachers. Significant differences were found in the perceptions of former state FFA officers who are teaching and those who are not teaching toward the stress level, discipline problems and the adequacy of the salaries vocational agriculture teachers receive.

Giese, A. D. (1989). Factors and persons influencing North Dakota high school students to enroll in vocational agriculture programs. Master of Science paper, North Dakota State University, Fargo.

The purpose of this study was to determine what influence various factors and persons had on the decisions of ninth grade students to enroll in vocational agriculture programs. Objectives of the study included determining the level of influence selected factors and persons had on the decisions of high school students to enroll in vocational agriculture programs.

The sample for this study consisted of 331 ninth grade students enrolled in vocational agriculture at 24 randomly selected schools. Questionnaires and consent forms were developed and sent to the vocational agriculture instructors at each of the selected schools. All returned questionnaires were usable, and the response rate was 100%. Frequencies, percentages, mean scores, and standard deviation were determined by statistically analyzing the data. A t-test was used for comparison of gender groups and farm/non-farm experience.

The desire to gain knowledge and skill used in mechanics was the most influential factor according to students who enrolled in vocational agriculture programs. The father/guardian and friends were the persons most influential in the decisions made by students to enroll in vocational agriculture programs. The majority of students enrolled in vocational agriculture programs were "B" or "C" students. Also, approximately 45% of the students enrolled in vocational agriculture programs live in town.

Lester, S. W. (1989). Leadership ability of young urban adults in North Dakota. Master of Science paper, North Dakota State University, Fargo.

The purpose of this study was to determine the perceived leadership ability of young adults living in or near North Dakota cities with a population of 2500 or more. Objectives of this study included determining the demographic characteristics of these persons, determining their leadership ability, comparing leadership ability based on demographic characteristics, and comparing the leadership of young urban adults and young rural adults.

The 433 young adults in the sample were asked to respond to a questionnaire which they were mailed. The responses on the returned questionnaires, 246 of 433 (57%), were used to calculate frequencies and percentages for the demographic characteristics, and mean scores and standard deviations for each of the leadership skills statements. A t-test and an analysis of variance (ANOVA) were used to identify significant differences between demographic groups.

Young adults residing in urban areas of North Dakota gave themselves good marks for perceived leadership ability. The strongest leadership skills were in the category of General Leadership, whereas Speaking Skills were reported as being the weakest. Significant differences in leadership skills were found when comparing ability based on gender, level of schooling completed, and age. Also, young urban adults perceived their leadership ability to be higher than young rural adults.

Link, H. G. (1989). Perceptions of North Dakota vocational agriculture instructors regarding the role and effectiveness of their professional vocational organizations. Master of Science paper, North Dakota State University, Fargo.

The specific objectives of this study were to determine (1) the role of professional vocational education organizations as perceived by North Dakota vocational agriculture instructors, (2) the effectiveness of professional vocational education organizations as perceived by North Dakota vocational agriculture instructors, and (3) whether these attitudes differ according to the length of instructional tenure of the instructors.

A questionnaire was developed, pilot tested, and distributed to 107 North Dakota vocational agriculture instructors; the response rate was 100%. Data were analyzed using means and the chi-square test.

North Dakota vocational agriculture instructors were generally well-satisfied with their professional vocational education organizations. These organizations were perceived by 94.4% of the respondents as being at least somewhat effective in meeting the needs of the profession.

The major roles of the organizations, as perceived by respondents, included the following: impacting legislation, impacting policy, promoting vocational agriculture/vocational education, and maintaining ties with business and industry.

The respondents did not feel the organizations were as effective as they could be in meeting the high priority roles. The professional organizations were perceived as very effective in providing recognition, sponsoring meetings, and promoting fellowship. The dues cost compared to the value of membership was "about right" to "low" in the view of 64.5% of the instructors.

Thomas, W. A. (1989). Reasons why North Dakota residents chose vocational-technical education in Minnesota. Master of Science paper, North Dakota State University, Fargo.

The purpose of this study was to determine the reasons why vocational-technical students from North Dakota attended Minnesota Area Vocational-Technical Institutions. Specific objectives were to determine: (a) the demographic characteristics of North Dakota students enrolled in vocational-technical programs in Minnesota, (b) which programs and institutions students attended in Minnesota, (c) reasons

why students chose Minnesota institutions over North Dakota institutions, and (d) whether North Dakota two-year postsecondary institutions could serve the needs of students who have left the state to attend Minnesota AVTIs.

More than three-fourths of the respondents were 21 years old and older. More than 80% were from the extreme eastern part of North Dakota, principally the Fargo and Grand Forks areas. North Dakota residents were enrolled in 118 different programs in 25 Minnesota AVTIs in 1987-88, with 92% attending at Moorhead and East Grand Forks, two cities adjacent to the North Dakota border. The major reason cited by respondents for seeking vocational-technical education was to prepare for employment by completing a program; almost two-thirds planned on obtaining a certificate.

Curriculum content, placement record of institution, program reputation, and availability of employment were cited as influential factors for choosing an institution. Brochures, institution faculty, campus visits or tours, and direct mailings were the most influential sources of information. Respondents felt that North Dakota could have met their training needs if the programs were closer to home, if the programs were offered in the state, and if the job placement records were better.

Thompson, G. W. (1989). Student perceptions of characteristics and activities contributing to the effectiveness of vocational agriculture teachers. Master of Science paper, North Dakota State University, Fargo.

The purpose of this study was to determine the extent to which students agree that certain characteristics and activities of vocational agriculture teachers make them more effective.

Students agreed that each of the 65 stated characteristics or activities in the questionnaire contributed to the effectiveness of vocational agriculture teachers. The highest levels of agreement were for the following statements: allow students to express opinions on subject material; be committed to helping students learn; enjoy teaching; show enthusiasm for teaching; provide a comfortable learning environment; help students learn to think for themselves; and try to understand student problems and concerns. The lowest levels of agreement were for the following statements: publicize SOE programs through newspaper, radio, television, or other organizations; just visit with students and not review the record book; become close personal friends with some students; show their commitment to teaching by belonging to professional teacher organizations; and frequently review previously studied material.

Responding students agreed that personal characteristics contributed most to the effectiveness of vocational agriculture teachers and that characteristics and activities related to SOE programs contributed the least. Only a few significant differences were found when comparing students who reported grade averages of "B and above" with students who reported grade averages of "less than B."

OHIO

Anyadoh, E. B. (1989). The relationship between selected factors and supervised occupational experience scores in Ohio. Doctoral dissertation, The Ohio State University, Columbus.

The major purpose of this study was to investigate relationships between the Supervised Occupational Experience Scores of the vocational agriculture students in the state of Ohio and the following variables: 1) selected teacher characteristics; 2) selected teaching practices to SOE program; 3) selected characteristics of the vocational agriculture program department; 4) selected characteristics of the student; and 5) factors of student opportunity to engage in Supervised Occupational Experience program.

The research was designed to be ex post facto and correlational in nature. The target population consisted of all the vocational agriculture teachers (N=38) and their senior students (N=283) enrolled in vocational agriculture programs in district 7 of Ohio. Two questionnaires were used in collecting the data. The questionnaires were derived from Gibson's study in Kentucky in 1987. The instruments were adapted to Ohio and measured participation in Supervised Occupational Experience programs by vocational agriculture students. The scoring procedure for the State FFA Degree in Ohio was adopted in measuring the student's Supervised Occupational Experience. Significant relationships were found between number of years of high school vocational agriculture completed, miles teacher lives from school and number of days extended service contract, and students' SOE scores.

Significant relationships were also found between the amount of class and/or laboratory time available for students to update recordbooks, average number of SOEP visits during the summer, supervision of fairs, and amount of time spent on teaching an introduction to SOEP and students' SOE scores.

Significant relationships were found between school farm provided for SOE program, other facilities provided for SOE program, taxonomy of teacher, program type, type of school, type of teacher preparation, number of teachers in the department and students' SOE scores.

Relationships existed among the type of career plans, years completed in vocational agriculture and student's typical grade in all their high school classes with student SOE scores.

Significant relationships were found between where the student lives and types of students' family income and students' SOE scores.

Bhardwaj, A. (1989). Cognitive levels of the educational programs offered by the Ohio Cooperative Extension Service county agricultural extension agents. Doctoral dissertation, The Ohio State University, Columbus.

Extension educators have several roles to perform: change agent, facilitator, adult educator, and manager. Lately, the role of agents as educator has become more important than any other roles. Yet, the agent's role as educator is the one role most extension agents are least prepared to perform (Astroth, 1987). Often, agents have been accused of merely disseminating information and not attempting to deliver decision-making abilities among their clientele. Hence, a need to study the cognitive levels of extension educational programs was of exigent concern.

Research Questions: 1. What is the attitude of selected county agricultural agents of the OCES toward a classification system of educational objectives?

2. At what cognitive level(s) of the system for classifying objectives developed by Newcomb & Trefz (1987), is the instruction offered by the county agricultural agents?

3. How do(es) the cognitive levels of instruction offered by the county agents vary with selected characteristics such as agent's age, work experience, support staff use etc.?

Procedures: The study was conducted in Ohio with a purposeful sample of 20 county agents, ranked best agents by their supervisors. A mixed-method approach (both qualitative and quantitative methods) to answer the research questions. Two instruments, one attitude questionnaire and one interview schedule, were developed by the researcher to address the research questions.

Results and Conclusions: The agents exhibited a positive attitude toward an educational objectives classification system. The agents perceived a classification system to be most helpful in program evaluation, followed by use in program planning and other general uses. Interestingly, the agents rated a system to be least beneficial for clientele.

Most of the extension programs were offered at the Processing and Evaluating levels contrary to the belief that extension programs were delivered at the Remembering level only. However, none of the programs was found to be offered at the Creating level.

None of the agents interviewed developed a lesson plan. At the most, the agents briefly outlined how they planned to conduct the program. However, all but one agent indicated a great need for lesson plans for educators. The most common reasons cited for not developing lesson plans were 'lack of time' and 'length of experience in teaching.

Further analysis indicated that the educational objectives were not formulated in terms of performance, end result or behavior, but rather as statements of what the agents needed to do in conducting the program. Again, all the agents agreed that objectives need to be formulated.

Recommendations: 1. The advancements in the discipline of cognition and instruction need to be utilized more in the extension profession if extension agents want to be professional educators.

2. In-service trainings should be organized to teaching about classification systems and their use in designing, delivering, and evaluating extension educational programs.

3. Why lesson plans and educational objectives are not being developed and used by the agents despite the fact they have positive attitude toward their uses need to be investigated in depth.

Cano, J. & Burkholder, K. (1989). Male vocational agriculture teachers' attitude and perception toward female teachers of agriculture. (Staff Study). Sex Equity Research Grant. The Ohio State University.

The purpose of this study was to determine the attitude and perception of male vocational agriculture teachers towards female vocational agriculture teachers on selected variables in Ohio.

The population of the study consisted of male vocational agriculture teachers in Ohio (N = 513). A census was used for the teachers in the taxonomies of Agricultural Business (N = 29), Farm Business Planning and Analysis (FBPA) (N = 27), and Natural Resources (N = 13). A random sample was selected from the taxonomies of Agricultural Mechanics (N = 81; n = 70), Horticulture (N = 71; n = 60), and Production Agriculture (N = 292; n = 170).

Data were collected by researcher developed mailed questionnaire. The questionnaire was content validated and field tested for reliability. The reliability coefficient for the questionnaire utilizing Cronbach's alpha was .89. The usable response rate was 65%. Non-response error was controlled by comparing early to late respondents which yielded no significant differences.

The results of the study indicated that female teachers of agriculture were not represented proportionately to the male teachers of agriculture in the state agriculture teachers association. Although the male teachers indicated that female teachers were capable of holding selected officer positions within the state association, the male teachers indicated that the three rank ordered office positions preferred for the females by the males were secretary, treasurer, and vice-president.

In regards to job competency, the males were in some agreement that female teachers of agriculture were competent teachers of agricultural subject matter. The male teachers indicated that females should teach in the following rank ordered taxonomies: horticulture, animal care, food processing, agricultural business, natural resources, FBPA, production agriculture and agricultural mechanics.

The male teachers strongly agreed that they understood the meaning of and context in which sexual discrimination, sexual bias, and sexual harassment could occur. Sexual discrimination against female teachers of agriculture was brought upon by male teachers of agriculture and the agricultural community. Sexual bias occurred against female teachers by

male teachers, agricultural students, parents of agricultural students, the agricultural community, and employers. Sexual harassment occurred against the female teachers by agricultural students.

Cano, J. and Martinez, C. L. (1989). The relationship between critical thinking ability and level of cognitive performance of Ohio vocational agriculture students. (Staff Study). Ohio Agricultural Researach and Development Center, The Ohio State University.

The purpose of this study was to determine the extent to which students in vocational agriculture programs were performing at the various levels of cognition utilizing Bloom's Taxonomy. In addition, this study sought to determine the extent to which vocational agriculture students think critically. Furthermore, this study sought to determine the relationship between level of cognitive performance and critical thinking ability.

The study was descriptive and correlational in nature. The population consisted of students enrolled in vocational agriculture classes from ten purposefully selected schools. Two standardized tests were administered to the students by their vocational agriculture instructors. The tests used for data collection were the Developing Cognitive Abilities Test and the Watson-Glaser Critical Thinking Appraisal. Reliability was established using the Cronbach's Alpha.

The results of this study indicated that students scored higher on questions based on the lower levels of Bloom's Cognitive Domain, with scores ranging as follows: 67% correct at the Basic abilities level (knowledge/comprehension), 59% correct at the Application abilities level (application), and 48% correct at the Critical Thinking abilities level (analysis and synthesis). The overall mean score for the Developing Cognitive Abilities Test was 58%.

Data on the Watson-Glaser Critical Thinking Appraisal indicated that the mean scores for each category were as follows: Inference, 38%; Recognition of Assumptions, 63%; Deduction 56%; Interpretation, 56% and Evaluation of Arguments, 56%. The overall mean score for the Watson-Glaser Critical Thinking Appraisal was 53%.

Differences were found in test scores on the Developing Cognitive Abilities Test (DCAT) among the grade levels through the use of one-way analysis of variance. At the Application abilities level of the test, significant differences among scores were noted between ninth-grade students and twelfth-grade students. Significant differences were also noted among total scores between ninth-grade students and twelfth-grade students.

No significant differences were found for student performance on the Watson-Glaser Critical Thinking Appraisal among grade levels.

Canonical correlation analysis between the predictor variable set (student mean score on the DCAT) and the criterion variable set (student mean score on the Watson-Glaser) indicated a significant relationship. When intercorrelations among predictor and criterion variables were considered, the relationship between the two sets of variables

indicated, generally, that higher student mean scores on the DCAT were accompanied by higher student mean scores on the Watson-Glaser test.

De los Santos, S. (1988). Use of Bennett's hierarchial model in the evaluation of the extension education program for Cacao farmers in the Northeast region of the Dominican Republic. Master of Science thesis, The Ohio State University, Columbus.

The purpose of this study was to evaluate the cacao training program by testing hypothesized relationships among selected demographic characteristics, reactions to the program, knowledge and skills gained, attitudes toward information given, and aspirations of farmers related to the program. The program was found to be helpful and effective as indicated by high levels of positive reactions, favorable attitudes, high perception of knowledge and skills gained, and high levels of farmer aspirations about the cacao training program. The best predictors of the dependent variable farmers' aspirations were reaction to the program, extent of involvement, and educational level of the farmers.

Doerfert, D. L. (1989). Performance of regular and industry-prepared vocational education teachers in Ohio on the national teacher exam core battery tests. Doctoral dissertation, The Ohio State University, Columbus.

In Ohio, vocational education teacher candidates enter teaching by two different methods of teacher preparation - the four-year college teacher education method (regular teachers) and the industry-teacher method where teachers receive temporary certification and must complete three years of inservice course work and supervision before being granted a provisional teaching certificate.

Limited evidence is available regarding the current level of competence of vocational teachers in Ohio. The present study addressed this problem by comparing the communication skills, general knowledge, and professional knowledge competence of the two groups of teachers.

The research was designed to be an ex post facto type of research, utilizing the static-group comparison design. The major independent variable, method of teacher preparation program received which possibly accounted for the variation in communication skills, general knowledge competence, and professional knowledge competence, had already occurred. The dependent variable was the adjusted scale scores achieved in the areas of communication skills, general knowledge, and professional knowledge as measured by the 1982-1983 National Teacher Exam Core Battery Tests. The independent variables (age, gender, high school grade point average, length of industry-related experience, teaching specialty area, the type of high school currently teaching in, amount of education received, and method of teacher preparation received) were identified by a questionnaire and available records.

The accessible populations included all beginning vocational agriculture teachers in Ohio prepared via the regular teacher education method (N=15) and all beginning vocational education teachers in the Central and Southwest Ohio Vocational Education Personnel Development Center Regions prepared via the industry teacher route (N = 51).

The results of the comparison of the method of teacher preparation received with the dependent variables showed that regular teachers scored significantly higher in communication skills, general knowledge, and professional knowledge competence than industry-prepared teachers. Amount of education received, however, explained the largest portion of variance in each of the dependent variables.

Elchert, H. S. (1989). Factors related to the educational needs of farmers in the Vanguard-Sentinel Vocational School District. Master of Science thesis, The Ohio State University, Columbus.

The purpose of this study was to describe the demographic characteristics of the farmers in the Vanguard-Sentinel School District, their needs, and interests in adult education and the attitude toward enrolling in adult farm management courses.

The sample of three hundred and thirty-three farmers were randomly selected from a population of two thousand five hundred farm operators.

The study shows that as farmers increased their acreage and the more they are involved in using financial statements and consultants the greater their needs of adult farm management education. The more farmers are involved in educational programs the more interest they have in continuing their education.

Fails, E. (1989). Factors related to aspirations of rural youth in Ohio. Doctoral dissertation, The Ohio State University, Columbus.

The major purpose of this study was to conduct a three year follow-up of the educational expectations and the occupational aspirations and expectations expressed by rural high school students in Ohio. The extent to which relationships existed between the educational attainment of the parents of rural high school students and those students educational plans were also studied.

The study was descriptive and relational in nature. The population consisted of alumni and seniors of four rural high schools in Ohio that participated in a previous staff study.

Using data collected in a previous staff study and a revised edition of that questionnaire, data were collected from 191 alumni and seniors from the four rural high schools.

Significant relationships were found between gender and the type of school/college seniors planned to attend, when post-high school education would begin for the alumni, and the salary expected by seniors the first year in their chosen career.

Significant relationships were also found between the high school curriculum followed and the parents expecting seniors to attend college,

senior's plans to attend college, the type of school the seniors planned to attend, when post-high school education would begin for seniors and job aspirations for seniors.

Significant relationships were found between the education attainment of the mother and seniors plans to attend college and the type of school or college the seniors planned to attend.

Parents rated second to self on influence of the rural youth on their curriculum and career choices of the alumni; however, friends rated second on influencing the seniors in their curriculum selection in 1988.

The job and career aspirations were significantly different for seniors in 1985; however, they were not significantly different in 1988. Job aspirations were significantly different in 1988 than 1985 for seniors. The occupations expected by seniors in 1988 were significantly higher than 1985.

Female rural youth attended college immediately after high school in greater percentages than males. Academic tract students were expected to pursue college careers in greater percentages than students following other curriculums.

Honaker, K. A. (1988). Attitudes of horticulture teachers toward handicapped students. Master of Science thesis, The Ohio State University, Columbus.

To determine the attitudes of vocational horticulture teachers toward handicapped students, a descriptive correlational study was conducted involving 89 vocational horticulture teachers in Ohio during the 1987-88 school year.

Data obtained indicated that teachers had the most positive attitude toward learning disabled students and the least positive attitude toward behaviorally handicapped students. In addition, 76 percent of the teachers ranked learning disabled students as easiest to integrate into their programs while 82 percent ranked behaviorally handicapped students as the most difficult to integrate. There were low to negligible relationships between teachers' attitudes toward handicapped students and selected teacher characteristics.

McCracken, J. D. (1989). Community leaders' perceptions of the importance of rural community schools. Ohio Agricultural Research and Development Center, Staff Study, The Ohio State University, Columbus.

The main purpose of this study was to describe the perceptions rural community leaders have about the importance of the school in the community. Personal interviews were conducted with community leaders associated with four rural Ohio high schools. School administrators identified the community leaders.

Open-ended questions were used to encourage free discussion by respondents. Each interview lasted approximately 30 minutes. Content

analysis procedures were used to summarize the results. Community leaders perceived the school as important to the community in ways that could be classified as educational, social, cultural, and economic. Many seemed to take rural school educational benefits for granted. They expressed that the real value of rural schools went far beyond the knowledge imparted to students. The schools played an important role in recreational and cultural activities available to the rural youth. Not only did the schools serve as activity centers for the youth, but facilities were accessible for adult activities. This study confirmed previous research findings concerning the importance of the school, both economically and educationally, within the structure of rural communities. Decision makers who consider school consolidation should realize that the impact of closing a school may be greater than they might envision; they may also be closing the community served by the school.

McCracken, J. D. & Odell, K. S. Educational plans of rural Ohio secondary students. Ohio Agricultural Research and Development Center, Staff Study, The Ohio State University, Columbus.

A study was conducted in Ohio with the major purpose of discovering the aspirations of rural students relating to higher education. The population for this descriptive and correlational study consisted of 10th and 12th grade students in 52 public secondary schools classified as rural. Usable data were gathered from 491 students in the four sampled schools. Positive but low relationships were found between parental expectations and the expectations of students (r=.24). Most students had discussed their future educational plans with their parents. Approximately one-half of the students believed their parents expected them to attend college. Over two-thirds of the parents had no education beyond high school but over 60% of the students reported they would attend college. Over 46% of the mothers were homemakers but less than one percent of the students expected to become homemakers as their sole occupation. Agriculture was not the first choice for advanced study. Engineering was the area chosen by 12%. Education, engineering, health sciences, and business accounted for almost 40% of the areas for advanced study. Only 4.3% of the students from these rural schools listed agriculture as their choice for future study. Males tended to expect to study agriculture, science, and engineering more than females. Females expected to study the areas of art, mathematics, social science, education health science, business, and secretarial science more than males. Females reported more definite plans to attend college than males. Males expected higher first-year incomes than females, and were more likely to enter military service. Rural students attending college will typically enter occupations that are not present in large numbers in rural communities.

Miller, C. (1989). Cognitive levels of instruction and student performance in college of agriculture courses. Doctoral dissertation, The Ohio State University, Columbus.

The purpose of this study was to describe the cognitive levels of course experiences and student performance in Ohio State University College of Agriculture courses. The study also investigated relationships among course experiences and student performance at the various levels of cognition. Course experiences considered included instructor discourse, tests, quizzes, and assignments. Additional variables considered included student academic ability, motivation and previous experience as well as instructor previous experience.

This was a descriptive study. The population consisted of 127 students enrolled in four selected Ohio State University College of Agriculture introductory level courses. Courses included were the areas of agricultural economics, dairy science, food science, and horticulture.

The cognitive levels of instructor discourse, tests, quizzes, assignments, and examinations were assessed using the Florida Taxonomy of Cognitive Behavior. The Developing Cognitive Abilities Test was used as a common instrument for assessing differences in student cognitive performance within and among courses. The Developing Cognitive Abilities Test was administered as both a pretest and a posttest. Subject matter specific pretests developed by the researchers were used to assess student cognitive performance in the subject matter areas at the beginning of each course. Course final examinations were used to measure student cognitive performance in the subject matter areas at the completion of each course.

It was found that classroom instruction (instructor discourse) occurred primarily at the knowledge and comprehension levels of cognition, which were the two lowest levels identified in Bloom's Taxonomy. Over 75% of the items on tests and quizzes given in the courses studied were written at the knowledge and comprehension levels of cognition as well. Assignments included more questions and tasks at the application, analysis, synthesis and evaluation levels of cognition than at the knowledge and comprehension levels.

Student cognitive performance in the subject matter areas increased significantly in three of the four courses studied. No significant changes in student performance on the Developing Cognitive Abilities Tests were found however. Low or negligible relationships were found between the level of student cognitive performance in the subject matter areas and the cognitive levels of instructor discourse, tests and quizzes, and assignments. Low or negligible relationships were also found between student cognitive performance and student academic ability, student motivation, student previous experience and instructor previous experience.

Nazri, M. I. (1988). Professional knowledge competency achievement of agricultural teachers with and without preservice teacher preparation in Peninsular Malaysia. Doctoral dissertation, The Ohio State University, Columbus.

The research was primarily concerned with the problems of professional knowledge competence of two groups of agricultural teachers. One group of teachers had preservice teacher preparation while the other group did not have such preparation. The primary objective of the research was to compare the professional knowledge competence of the two groups of teachers.

The research was designed to be an ex post facto type of research, utilizing the static-group comparison design. Types of teacher qualification, with and without preservice teacher preparation, was the naturally occurring event. The dependent variable, professional knowledge competence, was measured by a 50-item, multiple-choice test. The extraneous variables were: race, age, gender, teaching experience, teaching location, teaching specialty areas, and inservice courses completed (by areas). One major hypothesis and several alternative or "control" hypotheses were set and tested.

A total number of 141 teachers participated in the study. Out of this total number of teachers, 71 teachers had preservice teacher preparation while 70 teachers did not have such preparation. All participating teachers were teaching agricultural science at the upper-secondary level when the study was conducted. The demographic and background variables of teachers were identified by means of a questionnaire.

The findings showed that teachers with preservice teacher preparation had significantly higher professional knowledge achievement than those teachers without such preparation. The extraneous variables which had significant relationship with the knowledge competence were: teaching location, inservice courses in educational sociology and classroom management. The results of the comparison of teacher qualification type with the extraneous variables showed significant relationship between the former and race, teaching location, teaching specialty areas, and inservice course in audiovisuals. After analyzing the results of both comparisons, it was concluded that teacher qualification type could offer a plausible explanation for the difference in professional knowledge achievement of the two groups of teachers.

It was recommended that preservice teacher qualification be a critical criterion in determining and assessing the difference in professional knowledge competence of teachers. It was further recommended that all prospective teachers be required to possess a preservice teacher qualification before they could be considered for a teaching job in agriculture.

Pickford, J. C. (1988). Selected student and professor variables related to cognitive achievement in college of agriculture courses. Master of Science thesis, The Ohio State University, Columbus.

The research was a pilot study to determine instructor's cognitive level of teaching, student's cognitive level of achievement, and factors related to student cognitive achievement in three undergraduate College of Agriculture courses. All student and two instructor variables were assessed by survey instruments. The cognitive level of tests and assignments, cognitive level of teaching, and cognitive level of achievement were evaluated using the Florida Taxonomy of Cognitive Behavior. All instructors were found to be teaching at a low cognitive level. Student cognitive achievement was most closely related to the cognitive level of tests and assignments.

Rea, J. K. (1989). A study of the motivations and characteristics of mature (age 50 and older) 4-H volunteer advisors in Ohio. Master of Science thesis, The Ohio State University, Columbus.

The purpose of this study was to identify and describe volunteer 4-H advisors (age 50 and older) in Ohio. In addition, the study was designed to determine why mature adults served as volunteer 4-H advisors. Four hundred seventy-one mature 4-H volunteer advisors from 20 purposefully selected counties of Ohio were surveyed via mailed questionnaires. Data on the characteristics; motivations for volunteering; and perceptions of the mature 4-H volunteer advisors in Ohio were collected and analyzed in this study.

Selassie, M. H. (1989) Methods used to teach agriculture. Doctoral dissertation, The Ohio State University, Columbus.

The main goal of this study was to determine the extent to which teachers of production agriculture used a variety of teaching methods in teaching livestock production, crop production and agricultural mechanics. This study included three groups of Ohio production agriculture teachers, i.e., teachers who taught 7 or more years, cooperating teachers, and first year teachers. The senior students of these production agriculture teachers were also asked to what extent their teachers used the various teaching methods as a way of attempting to corroborate teacher self reported data.

Furthermore, this study sought to determine: 1) the extent to which frequency of use of teaching methods was associated with teaching experience, teachers knowledge of subject matter, professional training, level of education, adequacy of equipment and age; 2) the relationship between teacher reported use of teaching methods with their students reported perception of use of teaching methods; 3) teachers use of specific guidelines when selecting teaching methods; and 4) the extent to which the three groups of teachers differed on the variables of

frequency of use of teaching methods, subject matter knowledge and professional training.

The results showed that, even through the intensity of use of teaching methods varied from teacher to teacher, teachers did vary methods when teaching production agriculture. Lecture/discussion and general class discussion were used most frequently when teaching the four areas of production agriculture. Furthermore, results indicated that professional training and subject matter knowledge were highly associated with frequency of use of teaching methods. The students reported extent of use of methods was related to teacher self reported data to varying degrees was also the areas examined. Teachers paid more attention to subject matter, teaching material availability and availability of time when selecting teaching methods than they did with "nature of the students" and matching domains of learning with students' intellectual development.

Simelane, M. J. (1988). Planned use of subject matter content by final year Swaziland secondary agriculture students. Doctoral dissertation, The Ohio State University, Columbus.

The major purpose of the study was to determine the extent to which students used the subject matter content taught in the O'Level Agricultural education program in Swaziland.

The research design implemented in the study was classified as descriptive correlation. The population of the study consisted of all completing students enrolled in the O'Level Agriculture program in 16 schools offering agriculture in Swaziland during the period April to June 1988. A validated list of schools and enrollment figures was obtained from the Senior Inspector's office, to control for frame error. Sampling error was not a threat in this study since the study involved all schools and students involved in the program. The target and accessible population were 493 O'Level Agriculture students enrolled in the program. The method of data collection was a self-administered questionnaire. Copies of the instrument were left with the agriculture teacher for students who were not in on the day the instrument was administered. This controlled for non-response error. Content validity was determined by using a panel of experts. The instrument was field-tested with first-year students enrolled in the two-year program in agricultural education, University of Swaziland. This established internal consistency.

Descriptive statistics (frequencies, percentages, measures of central tendency and variability) were used to organize and summarize the data. Correlations between variables were established by using Chi-squares, Cramer's V, and Phi coefficients to determine the nature and strength of relationships.

Students in the O'Level Agriculture program in all four areas of the syllabus reported they rarely used the skills and knowledge taught in the program. The majority of students stated that they did not intend to use the skills and knowledge taught in all four areas of the program. Selected students' personal characteristics and the current

use and/or intent to use subject matter content taught in the high school agriculture program revealed a negligible to moderate degree of relationship.

Whittington, S. (1988). The current status of the female vocational agriculture teachers in Ohio with regard to support and encouragement, subtle sexual harassment and sex discrimination, and job enjoyment. Master of Science thesis, The Ohio State University, Columbus.

This descriptive survey sought to describe the current status of the female vocational agriculture teachers in Ohio with regard to support and encouragement of one another, subtle sexual harassment and sex discrimination at school, and job enjoyment. The study also examined relationships between these variables and selected demographic characteristics.

The population consisted of all female vocational agriculture teachers in Ohio (45). Questionnaires, developed by the researcher and a panel of experts, were received from 97.5% of the population.

It was revealed that the female vocational agriculture teachers in Ohio offered very little support and encouragement to one another. They were rarely sexually harassed or discriminated against. The teachers often enjoyed the selected statements about their jobs.

There were either low or no relationships found between the selected demographic characteristics and degree of subtle sexual harassment and sex discrimination. Relationships between selected demographics and job enjoyment ranged from no relationship to moderate relationship.

Wims, D. (1989). A descriptive study of southwest Georgia rural schools and twelfth grade students' educational and occupational aspirations and expectations. Master of Science thesis, The Ohio State University, Columbus.

The purpose of this descriptive study of southwest Georgia rural schools and twelfth grade students was to describe the characteristics of the schools, the students' personal and educational backgrounds, and their occupational and educational aspirations and expectations. In the five randomly selected rural high schools 73.4 percent of the twelfth grade students were Black. The socioeconomic status and educational attainment of the parents was low. Parents had the greatest influence on students' plans, and the majority of the seniors expected to continue their education after high school. The students aspired to enter higher level occupations and earn more money than they actually expected.

Zimmer, B. P. (1988). Mentor and protegee perceptions of relative success of the Ohio mentoring system. Master of Science thesis, The Ohio State University, Columbus.

The study was designed to analyze the relative success of the Ohio Mentoring System, as perceived by Mentors and Protegees of the Ohio Cooperative Extension Service (OCES) and assess the future direction of the program.

The descriptive-correlational study analyzed a population of Mentors (N=60) and Protegees (N=60), utilizing mail questionnaires.

As Mentors and Protegees spent more time mentoring, they felt the success of their mentoring experience increased. Over ninety percent of the Mentors and seventy percent of the Protegees felt their mentoring experiences were successful. Mentor/Protegee relationships were also more successful as Protegee understanding of the OCES increased.

OKLAHOMA

Braga, M. G. S. (1988). Developing an agricultural curriculum model for rural schools in Northeast Brazil. Doctoral dissertation, Oklahoma State University, Stillwater.

The major purpose of this study was to develop an agricultural curriculum model. The secondary purpose was to verify the importance of the model for rural schools in Northeast Brazil. Agriculture curriculum materials from developed and developing countries were examined in order to formulate the curriculum model. The population used to verify the model for this study was 86 Brazilian graduate students majoring in agriculture in United States universities. The information needed to verify the importance of the model was obtained through the use of a questionnaire. An overall return of 70 (37 percent) was secured from the respondents.

The major findings for this study were that the agricultural curriculum model for elementary schools was classified as 'Important' overall and the agricultural curriculum model for secondary schools was classified as 'Very Important' overall. It was also found that the area of Nutrition and Health was the most important area for the whole model. It was concluded that all sections of the secondary curriculum model were rated higher than those in the elementary curriculum model. This might reflect the experience already existent in technical agriculture in the secondary schools in Brazil or it may indicate that some areas need to be reexamined for elementary schools. Another conclusion was that subjects related to the one of Nutrition and Health should be included in any curriculum in agriculture.

Carter, J. M. (1988). Contributions to excellence in teaching provided by OSU-Agricultural Education Scholarship, Incorporated as perceived by selected individuals. Master of Science thesis, Oklahoma State University, Stillwater.

The intent of this study was to analyze the OSU-Agricultural Education Scholarship, Incorporated (OSU-AES,I) contribution to excellence in teaching as perceived by selected individuals. This analysis should provide essential information to the OSU-AES,I Board of Directors. The 50 respondents (26 Vo Ag public school administrators) to the mailed questionnaire comprised 92.59 percent of the total of 54 that were surveyed. Questions requiring forced choice responses, open-ended questions, and a Likert-type scale to rate levels of performance factors were developed to elicit responses from both groups within the population.

Analysis indicated that former OSU-AES,I scholarship recipients had a feeling of financial security, moral support, and an opportunity to devote more time to their studies as a result of having received the scholarship. Furthermore, they perceived that they were "Better Than Most Other Vocational Agriculture Teachers" in overall classroom

teaching, advisement to the FFA, and conduct of SOEP. The public school administrators perceived the performance levels of the former OSU-AES,I scholarship recipients to be "Better Than Most Other Classroom Teacher" and/or "Superior to Most Other Classroom Teachers" in the areas of Human Relation, Teaching and Assessment, Classroom Management, and Professionalism. Also, they perceived the former OSU-AES, I scholarship recipients to be "Better" or "Superior" when compared to other vocational agriculture teachers. Finally, it was concluded that the OSU-AES,I did contribute to excellence in teaching.

Diel, T. D. (1989). Comparison of Oklahoma agribusinessmen's attitudes toward future careers in agriculture. Master of Science thesis, Oklahoma State University, Stillwater.

The major purpose of this study was to determine what prospective agricultural career opportunities will become important. A further purpose of this study was to determine the experience and education required, as well as the likely age for entry-level employment into the agricultural careers. The scope of this study included Oklahoma agribusinessmen who were asked to provide their perceptions of the "best" prospective agricultural careers. They were also asked to determine the entry-level employment opportunities, minimum entry-level educational requirements, whether vocational agriculture is important to the success of the selected agricultural career, entry-level job experience requirements, the likely age at entry into the selected agricultural career, and the entry-level salary range for the prospective agricultural careers. There were 178 agribusinessmen, which represented 12 percent of the population, who completed and returned the mailed questionnaire.

Results from this study were reported according to the objectives of the study. Prospective agricultural career opportunities according to the Oklahoma agribusinessmen included a substantial increase in: scientists, engineers and related specialists; education, communication and information; and, managers and financial careers, for persons who have computer skills. Also, there will be opportunities for persons who have skills in management, engineering, environmentalism, marketing, accounting and merchandising. It was particularly notable that the Oklahoma agribusinessmen perceived that employment opportunities requiring computer skills would require little, if any, prior experience for entry-level position; however, other agricultural careers would require some prior experience at the entry-level. The likely entry-level age into agricultural careers was between 22 and 25 years of age. The entry-level salary of most of the prospective agricultural careers was estimated to be $20,000 to $25,000, largely dependant on the level of education acquired by the applicant.

Gallatin, L. D. (1989). Factors affecting decisions regarding alternative agriculture enterprises by farmers and ranchers in Oklahoma. Doctoral dissertation, Oklahoma State University, Stillwater.

A telephone survey was conducted with Oklahoma farmers and ranchers concerning their perceptions and concepts of alternative agricultural enterprises. This study included two groups. The first group, the random sample group, included 383 farmers and ranchers stratified proportionally in four districts, in order to be able to generalize the findings statewide and to provide information from traditional producers about encouraging and discouraging factors for trying alternative agricultural enterprises. The second group, the alternative agriculture group, included farmers and ranchers that were identified as being involved in some type of alternative agricultural enterprise. The study was intended to provide information regarding: (1) interest and/or involvement in alternative agricultural enterprises by Oklahoma producers; (2) types of alternative enterprises Oklahoma producers have adopted; (3) profitability of enterprises as rated by Oklahoma alternative agricultural producers; (4) factors that encouraged or discouraged adoption of alternative agricultural enterprises; (5) information sources used by farmers and ranchers and the rated effectiveness of these sources; and (6) demographic information about the two groups in the study.

Oklahoma farmers and ranchers had a high interest or involvement in alternative agricultural enterprises in all areas. Enterprises most often identified were: tomatoes, sweet corn, squash, okra, green beans, cucumbers, peppers, peaches, watermelons, cantaloupe, apples, strawberries, pecans, Christmas trees, Angora goats, and catfish. Those enterprises rated most profitable were mushrooms, sesame, trout, alligators, emu, dogs, and feed production. The genuine desire to produce was the encouraging factor most often mentioned. Most often noted as discouraging factors were high start up costs and markets. Cooperative Extension Fact Sheets and other farmers were the information sources most often used by adopters. The alternative agricultural group had an average of 2.7 alternative agricultural enterprises per producer.

Keating, R. D. (1989). Identification and effectiveness of information sources used by Oklahoma farmers in making decisions about alternative agriculture enterprises. Master of Science thesis, Oklahoma State University, Stillwater.

From August, 1988, to February, 1989, a telephone survey was conducted of 696 Oklahoma farmers who were identified as being involved in some type of alternative agricultural enterprise. The population was derived from referrals from county Extension agents in all Oklahoma counties, from membership lists in several producer organizations dealing in commodities considered alternative to traditional Oklahoma agriculture, and from miscellaneous independent referrals. The study was intended to provide information regarding: (1) types of alternative

enterprises being operated by Oklahoma farmers; (2) factors that encouraged adoption of alternative enterprises; (3) information sources used by Oklahoma farmers operating alternative enterprises; (4) effectiveness of information source as rated by Oklahoma farmers operating alternative enterprises; and (5) information sources used by Oklahoma farmers in making decisions in selected phases of their alternative enterprises.

Oklahoma farmers were involved in a broad diversity of alternative enterprises in the production of vegetables, fruits, melons, trees, plants, animals, fish and services. High potential for profit was the leading factor encouraging adoption of alternative enterprises. Sources used most widely by farmers to obtain information useful in making decisions about their alternative enterprise were other farmers; county Extension agents; Cooperative Extension facts sheets, newsletters or other publications; state or area Extension specialists; monthly or weekly farm publications; and farm or grower organizations. Information sources respondents rated highest in effectiveness were state or area Extension specialists; Cooperative Extension fact sheets, newsletters or other publications; farm or grower organizations; other farmers; professional consultants; and county Extension agents.

Lagang, R. G. (1988). Factors which influence job stress of agricultural assistants in eight divisions within Sarawak, Malaysia. Master of Science thesis, Oklahoma State University, Stillwater.

This study determined and evaluated the factors which influence job stress of agricultural assistants in eight divisions within Sarawak, Malaysia. Objectives of this study were to determine the amount of influence selected individual factors had on job stress of agricultural assistants; to determine the amount of influence selected interpersonal factors had on job stress of agricultural assistants; and to determine the one that cause the most stress in the agricultural assistants . The agricultural assistants surveyed were those who had worked not less than three(3) years in the Department of Agriculture, within Sarawak, Malaysia. There were 167 agricultural assistants surveyed in this study, which was done during the months of June throughout August, 1988, in Sarawak, Malaysia. Descriptive statistics was used to interpret the data in this study.

Results from this study were reported according to the objectives of the study. Agricultural assistants perceived that the highly stressful factors were: (1) dead-end job, (2) prospect for promotion, and (3) salary followed by moderately stressful factors such as (1) transfer, (2) amount of responsibilities, (3) lack of motivation, (4) reports and other paper work, (5) retirement, and (6) physical stress on the job, etc. The one item leading to the most stress in the job of agricultural assistant was "prospect for promotion".

May, R. W. (1988). Perceptions of selected Oklahoma swine producers of the Oklahoma swine evaluation station. Master of Science thesis, Oklahoma State University, Stillwater.

The intent of this study was to acquire the perceptions of selected Oklahoma Swine Producers members at the Oklahoma Swine Evaluation Station (OSES). A further purpose was to determine some of their production practices and problems. The 301 members of the Oklahoma Swine Breeders Association was the population of the study. Of the 301 members, 96 (31.9 percent) responded to the survey. A mailed questionnaire was utilized in the conduct of this study. Forced choice response questions were utilized to achieve the selected Oklahoma Swine Producers' perceptions of the OSES; however, they did have an opportunity to express their opinion concerning a few open-ended questions.

Analysis indicated that a large majority of the selected Oklahoma Swine Producers were familiar with the OSES and that they were generally satisfied with the efforts and products of the OSES. Further analysis indicated that the OSES has had an impact on the swine industry in Oklahoma. A majority of the respondents believed that E.coli-Scours was the major disease problem they were confronted with. According to the respondents, the "high indexing" swine resulted from the efforts of a successful producers, and excellent animal, and good management. In the final analysis, it was determined that the OSES was effectively meetings its objectives.

Moore, R. P. (1989). The perceived effectiveness of fund raising methods utilized by county 4-H programs in Oklahoma. Master of Science thesis, Oklahoma State University, Stillwater.

The purpose of this study was to determine the perceptions of Extension 4-H Agents/field staff regarding fund raising efforts currently utilized by county 4-H programs in Oklahoma. A telephone survey was conducted in all 77 counties in Oklahoma during May, 1989. Seventy-four field staff (96.1%) participated in the study. Field staff were divided according to the four cooperative extension districts. The three part telephone survey consisted of four items pertaining to the county history of 4-H fund raising; 36 items that pertain to the field staffs' perception of successful fund raisers; and four items that relate to indicators of success. Frequency distributions, percentages, and arithmetic means were the descriptive statistics utilized to describe the data collected.

Adult 4-H leaders were identified as the group most involved in selecting fund raising activities for county programs. The criteria most frequently used in selecting a fund raising activity related to organizational structure. Visibility provided by fund raising activities with regard to solicitation of donations was perceived as a major advantage. "Sales of Commercial Products" and "Solicitation of Donations" were considered the most successful types of fund raisers currently utilized. It was apparent adult 4-H leaders select the

majority of 4-H fund raising efforts. It was further concluded that state directed programs were successful methods of 4-H fund raising. Both the Ronald McDonald House project and the Alliance for 4-H were considered successful fund raising programs and as opportunities for visibility. County 4-H programs should devise fund raising efforts that utilized a larger share of the volunteer work force. County and State Fund Raising efforts should be targeted to reach groups that are already convinced of the value of 4-H.

Peper, S. R. (1989). Extent of social development by vocational agriculture students/FFA members as perceived by selected vocational educators and public school superintendents. Master of Science thesis, Oklahoma State University, Stillwater.

The intent of this study was to determine the extent of social skills development achieved by vocational agriculture students/FFA members as perceived by selected vocational educators and public school superintendents. The 54 respondents (63.53 percent return) answered questions that were developed from the specific aims and purposes of the National FFA Organization, as well as other factors related to social skills competencies. Various "Likert-type" scales were used to allow respondents to rate: (1) the opportunities for and the extent of social skills development achieved by vocational agriculture student/FFA members, specifically in the areas of leadership, etiquette, citizenship, community service, and cooperation; (2) the opportunities for the extent of social skills development in other high school courses (i.e. English, math, history, science, etc.); (3) the importance of social skills development; and (4) the incorporation of teaching social skills in the classroom. Using a rating scale of "1" for most valuable and "12" for least valuable, respondents ranked 12 selected FFA activities according to their value toward the development of social skills.

The study indicated that social skills development in the areas of leadership, etiquette, citizenship, community service, and cooperation apparently is enhanced by those who become vocational agriculture students/FFA members. Analysis also indicated that these students have more opportunities to develop social skills than students not enrolled in vocational agriculture/FFA and that the public speaking contest is the most beneficial FFA activity contributing to the development of social skills.

Smith, L. R. (1988). Vocational agriculture teachers' perceptions of the Entry-Year Assistance Program and the First-Year Inservice Training Program. Master of Science thesis, Oklahoma State University, Stillwater.

The intent of this study was to determine the first year vocational agriculture Vo-Ag teachers' perceptions of the Oklahoma Entry-Year Assistance Program (EYAP) and the First-Year Inservice Training Program (ITP). Fifty-two (72.22%) of the population of 72 Entry-Year Vo-Ag teachers were asked to respond to questions pertaining to both the EYAP and the ITP. Most of the questions asked required forced-choice responses; however, the respondents were afforded an opportunity to report their perceptions or opinions relative to some open-ended questions. The primary objective of this study was to determine whether or not the EYAP and ITP provided needed assistance to the first year teacher and whether or not the EYAP and the ITP should be continued.

Analysis indicated that the first year Vo-Ag teachers received the needed assistance from the EYAP and that they believed the ITP was a positive program that was stimulating, informative, well organized, and addressed many of their needs. The first year Vo-Ag teachers believed both programs (EYAP and ITP) were important programs and that both should be continued.

Weathers, B. R. (1988). The effects of parenting as perceived by high school students in the areas of academic and extra-curricular activities. Master of Science thesis, Oklahoma State University, Stillwater.

The intent of this study was to measure the effects of single-parenting on students in a suburban high school. These effects were seen in academics and involvement in extra-curricular activities. It also was to obtain information on the incidence of single-parenting and how it affects the student. These effects were seen in academic and extra-curricular activities. The survey was administered to 258 individuals in the high school system representing seven percent of the students. The objectives were to find the percent of the single-parent families; difference in academic performance of students from two-parent and single-parent families; determine levels of involvement between students from two-parent and single-parent families, and determine the barrier(s) to involvement in extra-curricular activities between students from two-parent and single-parent families.

The analysis of data indicated almost one-half of all students in this urban school were from single-parent families. The students from single-parent families had a lower self-reported grade point average. The students from single-parent families also participated in fewer total activities and fewer activities per student.

Wright, R. L. (1989). An assessment of the perceived importance of the economic impact of vocational agriculture supervised occupational experience programs (SOEP) within Oklahoma communities. Master of Science thesis, Oklahoma State University, Stillwater.

The purpose of this study was to assess the perceived importance of the economic impact of vocational agriculture Supervised Occupational Experience Programs (SOEP) within Oklahoma communities. All 448 teachers in the state had the opportunity to complete "the SOE economic impact" survey during their monthly Professional Improvement (PI) meetings in January and February, 1988. Three hundred seventy-three (83.26 percent) participated in the study. The survey consisted of two sections - section one, which assessed specific demographic characteristics of teachers, while section two sought to determine teacher perceptions of the benefits of SOE, importance of SOE income and the impact of income derived from student SOE enterprises. Ordinal, Interval, and "Likert-type" scales were utilized to secure the participants' responses. An extensive review of literature was conducted to acquire student supervised training summaries and income multipliers in order to measure the impact of net SOE income. The descriptive statistics utilized to treat the data were frequency distributions, percentages and weighted means.

The teachers perceived leadership development, work habits, development of students' self confidence, skill development and record keeping skills as being of "very high importance". Even though SOE income was rated of "some importance", the teachers perceived the potential of losing SOE income from their communities as having a "high impact" on local economies. The income multiplier of 1.9 was considered to be representative for the agriculture sector across planning districts. A higher proportion of new SOE income was generated by students in the Northeast, Central, and Southwest districts. It was concluded that the selected benefits of SOE were beneficial to students and their communities. Therefore, it appeared that the teachers did not perceive SOE income as a primary goal in their programs. It was apparent that the teachers perceived their communities as having an awareness among students, administrators and community leaders concerning economic literacy and the impact of agriculture as well as the importance of students SOE income to local economies.

PENNSYLVANIA

Banski, K. (1989). Managing riparian zones and protecting water quality. (Master of Education Developmental Paper). The Pennsylvania State University, University Park.

Riparian zones provide many benefits for people while supplying unique and critical wildlife habitat. However, many land use practices, particularly those associated with construction and agricultural activities, severely impact the health of riparian zones. Improper land use practices frequently increase soil erosion and sedimentation and result in reduced land productivity and poor water quality.

The easiest and most effective means of protecting and/or stabilizing riparian zone areas is establishing lush vegetative buffer strips along waterways. A review of the literature revealed two primary reasons why landowners rarely establish buffer strips: (1) information on establishing vegetative buffer strips has not been compiled into a primary resource; and (2) available technical information is written in terms which are difficult for landowners to understand.

This project, therefore, developed a comprehensive educational publication, Managing Riparian Zones and Protecting Water Quality: A Guide to Establishing Vegetative Buffer Strips. The publication is targeted for use by landowners and the technical staff working with them.

An evaluation of the publication's content was conducted to determine its anticipated appropriateness and usefulness. The text was revised according to feedback obtained by committee members and some community technical staff who are currently working with landowners. In the future, follow-up evaluations need to be conducted to determine its effectiveness and what, if any, revisions in the publication's content need to be made.

Brubaker, L. (1988). The development of a simulation game for cooperative extension. (Master of Education Developmental Paper). The Pennsylvania State University, University Park.

Cooperative extension and its complexities are not totally understood by the public. Many know about extension programs, yet have little perception of the whole organization. The use of a simulation game can relay this "whole view" aspect. Following a literature review of simulation games' design and their educational effectiveness, a specific game was designed about cooperative extension.

The purpose of this project was to develop a simulation game to teach the program planning process and provide participants with background information about cooperative extension. The Cooperative Extension Game was designed for use by extension agents with executive committees, 4-Hers, new extension employees, and for instructors of undergraduate/graduate courses. An evaluation of the game was conducted

through feedback of volunteer participants and facilitators. The feedback provided material for adapting the games.

The Cooperative Extension Game provides an alternate technique to increase the public's awareness of the extension system. Further research needs to be conducted to determine the game's total effectiveness as an educational tool to provide information about cooperative extension.

Conroy, C. A. R. (1988). Identification of teaching techniques, strategies and styles for use with special needs students enrolled in Pennsylvania vocational agriculture. Master of Science thesis, The Pennsylvania State University, University Park.

The objectives of the study were to 1) assess agricultural knowledge increases of first year special needs students and 2) identify techniques, strategies, and styles used by teachers in the top 10 percent programs that contribute to increased learning. A 50 percent stratified random sample of all 320 Pennsylvania vocational agriculture teachers was drawn, and students enrolled in their classes studied.

A general agricultural knowledge test (GAKT) was developed with five questions each from animal science, plant science, FFA, agricultural mechanics, and horticulture. Instrument reliability was .74. Packets of tests were mailed to each teacher with instructions for administering the test and procedures for identifying special needs students as academically disadvantaged, economically disadvantaged, learning disabled, physically or emotionally handicapped and regular, non-special needs students. The GAKT was administered twice to determine educational gain of students classified by their respective school districts and not subjectively by their teachers.

Teachers with learning disabled or physically and/or emotionally handicapped students who participated in both posttests were placed into 3 groups: the top 10 percent teachers based on net increase in students' mean scores, the bottom 10 percent teachers based on net increase in mean scores and all others. Analysis of variance (ANOVA) showed significance differences' in knowledge increases for the three groups. Teachers were also grouped as the top 10 percent based on net mean increases and all others. Seven teachers were identified as the top 10 percent. On-site visits were made to their classrooms and observations conducted using instruments to assess overall classroom environment.

Vocational agriculture teachers who work successfully with special needs students were highly organized and creative, warm and accepting, and stress practical application of skills learned by hands-on experience. These teachers prepared many of their materials, particularly task and worksheets. Self-paced activities were used frequently.

Heuser, C. H., & Stinson, R. F., Editors. (1989). Nursery production-second edition, teacher version. (Teacher Education Series Vol. 28, No. 1 T), 296 pp., and student version (Teacher Education Series Vol. 28, No. 1 S), 240 pp.

A textbook intended for secondary and post-secondary instruction, this publication is also useful for employee development programs. The fourteen chapters were authored by 12 professionals from 5 institutions of higher education. The text was reviewed for practical accuracy by 20 prominent members of the Pennsylvania Nurserymen's Association.

Highly illustrated, this updating of a 1971 publication includes precision production planning, as well as new cultural techniques, pesticide safety, marketing, record keeping and inventory control. The adoption of the computer as an information tool has impacted upon all of these. Each chapter includes a section of suggestions for teaching the unit, review questions, and a "Skills Performance Evaluation" form for both formative and summative evaluations of student performance.

Khan, J. (1989). Design of a workshop to train PSU faculty as international consultants in youth development. (Master of Education Developmental Paper). The Pennsylvania State University, University Park.

Youth development has always been a source of attention for development planners and policy makers. An important drawback of previous youth development programs was that most of these schemes primarily focused on formal education. Nonformal education has greater flexibility, wider implications and more immediate results, but was often overlooked in the past. A majority of the youth in the underdeveloped countries, therefore, remained unskilled and unprepared for changing circumstances.

The purpose of this paper was to design a workshop to prepare the PSU faculty to offer services as international consultants in nonformal youth development programs. These faculty, who were already experienced in youth development programming, would therefore be prepared to share the expertise in different socio-cultural settings at the international level.

To achieve this purpose, the problem was first defined, relevant literature reviewed, and a design for the workshop prepared. The draft of the workshop design was evaluated by a panel of experts and necessary alterations were proposed. The workshop design was approved after incorporating the proposed alterations.

Maloney, T. (1989). Nitrogen recovery from fall-applied manure. Master of Science thesis, The Pennsylvania State University, University Park.

This study was conducted on The Pennsylvania State University Farm with Hagerstown silty clay loam soil. The objective was to evaluate three practices to reduce N losses from manure: (1) Incorporation, (2) Nitrification Inhibitors, and (3) Cover Crops. Dairy manure used contained .50 percent N, was well decomposed, and contained high amounts of bedding. A split-split plot design was used. Main plots had manure that had been either incorporated or not incorporated. Split-plot treatments had either manure with a cover crop or no cover crop. Split-split plot treatments had manure which received or did not receive an inhibitor. Nitrogen fertilizer rates of 0, 50, 100, 150, or 200 pounds per acre were applied to determine the N response of the site. Pioneer 3352 corn variety was used. Soil nitrate tests, leaf nitrogen, and grain yields were sampled to determine the effect of nitrogen used.

The 1988 drought influenced the results. Yields averaged 44.8 bu./A, one-third of the norm. Lack of water limited growth more than did nitrogen. Neither cover crop, inhibitor, nor incorporation resulted in significant yield differences. Tissue N values were low--ranging from 1.5 ppm for manure plots with an inhibitor to 2.35 ppm for plots receiving 200 pounds of N. Fertilizer additions significantly increased the N in the corn ear leaves as compared to where no fertilizer was applied. Check plots contained more nitrogen than manure plots because N in the manure was either denitrified or immobilized. Because of readily available carbon energy due to the high amount of bedding, denitrification could have resulted in significant loss of N in the late fall and early spring wet periods. Neither incorporating manure plots, adding an inhibitor to manure, nor cover cropping manure plots affected nitrate-N under these severe drought conditions.

Piwowar, T. R. (1989). Performance and attitude of college students using computerized tests. Master of Science thesis, The Pennsylvania State University, University Park.

The purpose of this study was to determine if student performance on an objective test is affected by the method of test administration. Subjects were students enrolled in an agricultural engineering course. They were randomly assigned to control and treatment groups with the control group taking the final examination by paper and pencil and the treatment group taking the same examination by computer. There was no time limit for subjects to complete the examination other than the 2-hour period scheduled by the university. All subjects completed an attitudinal questionnaire by paper and pencil once they finished the examination.

The research design chosen for this study was the Campbell and Stanley posttest-only control group design. The Statistical Package for the Social Sciences (SPSSX) was used to perform a t-test analysis for testing the hypotheses. A multiple regression analysis was used to

determine any relationship between independent variables and the dependent variable.

The results of this study indicated that the level of test performance decreased when students used a computer to take a test. There were no significant difference in subjects' attitudes toward computers or the test. Several researchers have studied computer-assisted testing recently, but the results were inconclusive and somewhat contradictory. The review of literature also concluded that most researchers have studied subjects with considerable computer experience.

Preble, K. S. (1989). Volunteer management training for extension/4-H professionals. (Master of Education Developmental Paper). The Pennsylvania State University, University Park.

Cooperative extension professionals work closely with volunteers to develop and implement educational programs. There are many skills extension agents need to manage a successful volunteer system. Agents with 4-H responsibility in Pennsylvania have expressed the need for additional training in many areas of volunteer management including volunteer middle management.

The primary purpose of this project was to develop a curriculum outline with recommended references for extension/4-H staff training in volunteer management. Literature in volunteerism, business, social work, educational and other social science fields was reviewed. Major competencies involved in volunteer management were selected for this knowledge base and compiled into a curriculum outline.

A secondary purpose of the project was to develop a notebook to assist extension professionals in integrating volunteer middle management into their county programs. While the primary sources came from literature on 4-H volunteer middle management, this notebook has a broader scope. It can be used to develop middle management efforts in all areas of extension.

Scanlon, D. C., & Rollins, T. J. (1989). The cognitive, perceptual and instructional preferences of agricultural education students. (AES Project 2849). The Pennsylvania State University, University Park.

The primary purpose of this study was to profile preferred learning styles of ninth, tenth, eleventh, and twelfth grade students studying agricultural education in Pennsylvania. The specific objectives of the study were to describe students' cognitive learning styles, perceptual learning styles, and instructional preferences for specific learning modalities.

Sampling units were intact classes of ninth, tenth, eleventh, and twelfth grade agricultural education students (n=224). Ten schools were selected by the researchers to participate in the study from the fall of 1988 through spring of 1989.

The instrument used to collect the data for this study was the Learning Style Profile (LSP) developed by the National Association of Secondary School Principals (NASSP).

Based on the findings of this study, a distinct profile of Pennsylvania agricultural education students emerged. When compared to the national sample, agricultural education students have substantially less-developed skills in four of the cognitive areas measured in this study--analytical, spatial, discriminating, and sequential skills. Cognitive skills dealing with memory are comparable to the national norm.

When asked to respond to a variety of information, agricultural education students were inclined to initially process information by hearing (auditory perception) and reacting with feeling (emotive perception). Agricultural education students did not prefer visual methods of learning as much as the national sample. Overall, these two groups were similar in their preferences for perceptual responses.

When considering instructional environments, agricultural education students preferred to learn in smaller-sized groups than the normed group. They also indicated a much stronger preference for learning via "hands-on" instruction and were only slightly more willing to express opinions, even if others disagreed. However, agricultural education students were not as likely to persist in a difficult task until completed and were less likely to prefer instruction emphasizing a high level of verbal and/or spatial activities.

Scanlon, D. C., Yoder, E. P., Hoover, T. S., & Johnson, S. S. (1989). Factors affecting past and prospective enrollments in secondary school agricultural education programs and FFA membership. (Staff Study). The Pennsylvania State University, University Park.

This study investigated factors that impacted on students' decision to enroll in agricultural education and join the FFA. A total of 554 junior and senior high school students participated in a national study that provided sociodemographic information and perceptions about agricultural education and the FFA.

There appears to be a dichotomous but consistent perception about agricultural education and the FFA. Future or current enrollees think that agricultural education will benefit them later in life, were influenced by others to enroll, and maintain a positive image about agricultural education. However, future or current non-enrollees see no future value in enrolling, were influenced by significant others not to enroll, and feel agricultural education is primarily for males with a farm background. Evidence suggests that perceptions about agricultural education and the FFA remain constant once they are formed, thereby supporting the need to "educate" youth about agriculture before they make critical enrollment decisions.

Also investigated were frequently used and successful recruitment and retention practices currently used to attract and retain students into agricultural education programs at local and state levels. Practices currently used to recruit minority and non-traditional

students into agricultural education were also investigated. Seventy-one teachers from 24 states and 31 state supervisors participated in the study by providing specific recruitment activities in use at local and state levels.

The most successful recruitment practices were the use of FFA activities and materials, making eighth grade recruitment presentations, and contacting junior high students. Conversely, barriers to enrollment were found to be much the same in all states represented in the study. Agriculture's farming image and the perception of agricultural education is a significant problem. Although many teachers are expanding their programs to reflect innovative and technological advances in agriculture, scheduling conflicts and increased academic requirements remain dominant barriers to enrollment.

Spoerke, G. R. (1989). Agricultural education curriculum update to meet Chapter 5 and 6 compliance. (Staff Study). Bureau of Vocational and Adult Education, Pennsylvania Department of Education. Department of Agricultural and Extension Education, The Pennsylvania State University, University Park.

The Pennsylvania Department of Education requires that vocational programs demonstrate a high quality of competency-based curriculum which is reactive to the needs of the local service area. Teachers need assistance in the development and management of their curriculum to meet these requirements as well as others imposed by state and local authorities.

The project developed competency lists and accompanying units of instruction to assist teachers in developing and managing curriculum in the areas of agricultural production and mechanics, forestry and horticulture. Existing lists of competencies, necessary for entry-level employment, were validated by industry representatives. State agriculture teachers wrote teacher planning guides for selected competencies in the validated lists. The guides identify performance objectives, learning activities, resources and evaluation procedures for each competency. In addition, an introduction was written for each unit which identifies related careers and math, science and English skills and knowledge required for the unit. The competency list is available in hard copy format and on a disk to be used with the department's curriculum planning program. Teacher planning guides are available in hard copy format and on disk for use with a variety of personal computer systems and word processing programs.

The group approach to curriculum development utilized in the project eliminated the costly duplicated effort experienced when schools develop their own curriculum. Using university personnel for coordination provided necessary assistance for unit development and kept all products in a uniform format.

Spoerke, G. R. (1989). Curriculum articulation between secondary and post-secondary forestry programs and the forest industry. (Staff Study). Bureau of Vocational and Adult Education, Pennsylvania Department of Education. The Department of Agricultural and Extension Education, The Pennsylvania State University, University Park.

Students transferring from secondary to two-year associate degree forestry programs in Pennsylvania were receiving minimal or no credit for skills and knowledge gained in high school programs. The project used curriculum development as part of an articulation model to promote the articulation process for forestry students.

A list of entry-level competencies for jobs in the forest industry was compiled and validated by an industry advisory council. A group of eight secondary and post-secondary forestry instructors developed teacher planning guides for each competency on the validated list. The planning guides identify performance objectives, learning activities, resources and evaluation procedures for each competency. Learning activities and resources shown to be effective for students with special learning needs are identified. In addition, unit introductions were developed for each unit or group of related competencies. These identify related careers and math, science and English skills and knowledge required for the unit.

The competency list is available in hard copy format and on a disk to be used with the department's curriculum planning program. Units of instruction are available in hard copy format and on disk for use with Word Perfect on MS DOS compatible computers. The units are currently being added to PENpages, a statewide computer networking system. A model for articulation, using curriculum development, was developed and approved for adoption by all participating educational institutions.

The use of university personnel to coordinate the curriculum development activities avoided duplicate effort and periodic visits gave instructors incentive to complete the writing assignments on time. The cooperation required between participating instructors at both levels built strong relationships and trust.

Lamberth, Edwin E., & Byler, Ben L. (1988). Impact of educational reforms on vocational agriculture programs in Tennessee. (Staff Study). Cookeville: Tennessee Technological University.

A study examined the impact of educational reforms on vocational agriculture programs in Tennessee. Questionnaires were mailed to all of the state's principals who had vocational agriculture programs in their high schools, agriculture teachers, and chairpersons of local advisory committees for vocational agriculture. Completed questionnaires were returned by 139 principals (72.4 percent), 131 teachers (55.7 percent), and 46 chairpersons (47.4 percent). Responses were analyzed using descriptive statistics and frequency distributions. According to the respondents, the positive impacts of national and state educational reforms outweighed the negative impacts. The reforms having the greatest positive impacts included increases in teachers input into programs, tests, and materials; implementation of attendance policies; involvement of business, labor, and civic leaders in educational planning; increase in instruction in effective study and work skills; mandated curriculum guides for all subject areas; and counseling to improve students' self-esteem and achievement. The reforms having the greatest negative impact were college preparatory curricula mandated by the University of Tennessee Board of Trustees and the State Board of Regents, increased administrative and noninstructional burdens on teachers, and increases in the number of units or credits required for graduation.

Lamberth, Edwin E., & Byler, Ben L. (1988). 1987-88 Follow-up study of alumni of the School of Agriculture at Tennessee Technological University. (Staff Study). Research Report Series No. 12. Tennessee Technological University.

The purpose of the study was to analyze the professional status of alumni of the School of Agriculture at Tennessee Technological University for the years 1986-87, 1985-86, 1982-83, 1980-81, 1975-76, 1970-71, and 1965-66.

The questionnaire used in collecting data was developed by the authors and was revised to conform with suggestions made by the faculty of the School of Agriculture. Mailing labels for graduates were obtained from the Tennessee Tech Alumni Office. For the years selected to study, there were 270 graduates of the School of Agriculture. The questionnaire, a letter of instruction, and a self-addressed, stamped envelope were mailed to each graduate. Approximately three weeks, eleven weeks, and sixteen weeks after mailing the questionnaire, follow-up letters were sent to each graduate who had not returned the questionnaire. One hundred and fifty-four (57 percent) returned usable questionnaires.

The findings were: 1) A majority of the graduates (64 percent) have spent most of their lives living in the country or in small towns; 2) Most of the graduates (66 percent) studied vocational agriculture in high school; 3) Parents exerted a great deal of influence on the graduates in choosing a college major; 4) Graduates were active in college organizations and a majority held offices in one or more organizations; 5) Many of the graduates had continued their education with 14 percent holding one or more advanced degrees and 19 percent completing some academic work beyond their B.S. degree; 6) A majority of the graduates (66 percent) were employed in agricultural occupations related to their majors at Tennessee Tech; 7) Most of the graduates (75 percent) stayed in Tennessee to work; 8) The current average salary of the graduates was $27,692; 9) Management, sales, marketing, and education were the most common job tasks performed by the graduates; 10) The respondents felt that their undergraduate education at Tennessee Tech was beneficial to their current professional endeavors and important in performing their current professional responsibilities; 11) Strengths of the agricultural program, according to the graduates, were faculty showed personal interest in the students, instructors were of good quality, and agricultural curriculum was well-rounded; 12) Improvements suggested by the graduates were construct a building for the School of Agriculture, improve farm facilities, include more practical agricultural experiences, and include more laboratory activities.

TEXAS

Texas A&M University, College Station

Flores, R. R. (1989). A comparison of Hispanic and non-Hispanic students enrolled in programs of agricultural education in secondary schools in the south coast region of California. Doctoral dissertation, Texas A&M University, College Station.

The purpose of the study was to identify characteristics that distinguished Hispanic students in programs of agricultural education in secondary schools in the South Coast Region of California from other students in those programs.

The study was conducted during the last month of the 1987-88 school year. The population was surveyed through the use of a data collection instrument.

Descriptive statistics were used for reporting the personal and situational characteristics of students. Frequencies and percentages were calculated to develop a profile of the students.

Correlational techniques were used to determine relationships among situational and personal characteristics, the students' goals for educational attainment, their reason(s) for enrolling in agricultural education in secondary schools, their career aspirations, their attitudes toward seeking eventual placement in an agricultural occupation, and the degree to which significant others influenced them.

The major findings of the study were as follows: (1) Hispanics enrolled were urban dwellers primarily; (2) rural students were positive in their perceptions of their level of participation; (3) rural students' aspirations toward careers in agriculture were greater than those of urban students; (4) the proportion of Hispanics decreased considerably after the first year of enrollment; (5) as length of enrollment increased, the more positive were students' aspirations toward careers in agriculture; (6) selected circumstances had more of an effect on Hispanics' enrollment than on non-Hispanics' enrollment; (7) Hispanics perceived opportunities in agriculture limited to a less extent than did non-Hispanics; (8) non-Hispanics were more positive in their views of the agricultural industry, in general; (9) Hispanics do not aspire toward careers in agriculture; (10) the educational attainment goals of Hispanics were greater than those of non-Hispanics; (11) students' perceptions of the influence of immediate family on educational decisions were positive; (12) the perceived influence of the immediate family on educational decisions was greater for non-Hispanics than for Hispanics.

Texas Tech University, Lubbock

Major, Betty Ruth Albers. (1988). Occupational status and educational needs of the College of Agricultural Sciences graduates of Texas Tech University, 1971-1986. Master of Science thesis, Texas Tech University, Lubbock.

The primary purpose of this study was to determine the occupational status of TTU College of Agricultural Science graduates

from 1971 to 1986 and evaluate the academic undergraduate program in the college.

The research data were secured from the return of 612 questionnaires by the graduates. Of these graduates, 66.5 percent were employed in agricultural occupations and 33.5 percent were employed in non-agricultural occupations.

The graduates who were employed in agricultural occupations were categorized into six occupational clusters as reported in the USDA publication titled "Employment Opportunities for College Graduates in the Food and Agricultural Sciences". The cluster and percent of graduates employed in each cluster at the time of this study were as follows: scientist, engineer or related specialist, 18.6 percent; manager or financial specialist, 20.3 percent; marketing, merchandising or sales representative, 12.8 percent; education, communication or information specialist, 13.6 percent; social service professional, 2.1 percent; and agricultural production specialist, 32.6 percent. The greatest employment opportunities for future Texas Tech graduates would be in the cluster, marketing, merchandising or sales representatives as only 12.8 percent of the graduates were employed in this cluster, whereas the future employment opportunities as reported in the USDA publication was 32 percent.

The percentage of graduates in an agricultural occupation who indicated an increase emphasis in certain college course areas was as follows: computer instruction, 89.4 percent; a leadership course, 54.3 percent; internships, 51.1 percent; and international agriculture, 31.7 percent.

Considering agricultural subject areas, 41 percent of the graduates recommended increased emphasis in weed control and approximately 30 percent of the respondents indicated increased emphasis in entomology, agricultural compounds and soils.

Two-thirds of the graduates in an agricultural occupation indicated the following business areas as needing an increased emphasis: business management, accounting and bookkeeping, business finance, and marketing. Fifty-seven percent of the graduates recommended increased emphasis in oral communications and 48 percent believed instruction in written communications should be increased. One-fourth of the graduates thought instruction in mathematics and statistics should be increased.

The implications of this research were that to find employment, graduates will need to accept jobs throughout the United States as 45.2 percent of the graduates in this study were employed in the West Texas region. Also, the college administration and faculty should revise the curricula to provide additional instruction in those course areas needing increased emphasis as recommended by the graduates.

Ali, H. A. (1989). Metribuzin effects on alfalfa yield and quality. (MS Plan B Report). Logan: Utah State University.

The purpose of this report was to evaluate Metribuzin effects on alfalfa quality and yield and to develop a strategy for implementing change in Somalia.

The context for research dissemination of results and adoption of improved practices and varieties in Somalia must include more farmer participation and better trained personnel who have better leadership. Somsalia, like other third world countries, needs to plan for its own destiny and make dramatic improvements in the execution of research and extension. Data gathering procedures will allow for better evaluation of station and on-farm trials. Adaptive research needs to benefit from more accurate analysis and reporting. The writer has gained experience in such work from this herbicide research.

Metribuzin treatment effects on weed-free alfalfa differed by variety. Metribuzin had no affect on quality and subtle affect on yield for some of the varieties tested.

In Somalia, historical records show that the gathering of data for country extension projects has been done in a rather inconsistent way. Several years ago, this aspect was acknowledged and a system to implement effective farm trials was set up under the technical advice of the Utah State University team. This project demonstrated the effectiveness of involvement of well-trained local subject matter specialists in setting up various seasonal, on-farm trials in order to obtain reliable analysis and conclusions. Likewise, the introduction of the personnel involved to sound management practices showed very positive effects upon the accuracy with which the trials were conducted under the supervision of the Utah team. The writer participated in this herbicide trial analysis in order to improve his research skills.

The writer found that the CIMMYT model for research and extension should be followed in Somalia. The writer concluded that this experience will help him conduct and analyze the results of on-station, or on-farm trials in Somalia and extend the information to farmers in a way that encourages adoption. (P. 89).

Ibrahim, A. A. (1989). Influence of sesame meal (a vegetable protein source available in Somalia) on broiler chick performance. (MS Plan B Report). Logan: Utah State University.

The purpose of this study was to evaluate the feeding value of sesame meal as a protein supplement in broiler rations to develop a strategy to encourage Somali farmers to use this locally grown feed. Sesame meal is not presently used to feed poultry in Somalia.

Two trials were conducted for 21 days each in electrically heated battery brooders. In Trial I, 480 commercial broiler chicks were

randomly assigned to the pens. Three hundred and fifty chicks were assigned in Trail II 2 weeks later.

With a view to determining the most economical combination of sesame meal and soybean oil meal, analysis of the data suggested that on the basis of cost and chick performance 10.5-15 % sesame meal combined with soybean oil meal is the most suitable dietary protein supplement in broiler rations. A model for the adoption of sesame meal in poultry rations was suggested to include replication of this study in Somalia. (P. 122).

Idow, I. A. (1989). Utah 1989 exotic noxious weed survey. (MS Plan B Report). Logan: Utah State University.

The purpose of this study was to conduct a survey of invading new weeds of Utah in 1989 and to compare this survey with the survey done in 1981 to determine how many acres were infested by each of 12 weeds and to determine geographical distribution of these invading weeds.

This was one of four weed surveys conducted in Utah since 1940. The makeup of noxious and invading week surveys has changed over time. Twelve weed species were considered in this study, but for comparing the surveys of 1981 and 1989, only 10 weed species were considered. The 12 weed species considered in this study are: black henbane, diffuse knapweed, dyers woad, leafy spurge, medusahead rye, musk thistle, scotch thistle, spotted knapweed, squarrose knapweed, tall whitetop, velvetleaf, and yellow star thistle. Medusahead rye and scotch thistle were not included in the comparison of the 10 weeds surveyed in 1981 and 1989. The information for this survey was collected from county weed supervisor. Twenty-eight of 29 weed supervisors returned the questionnaires and maps describing the number of infestations and the total number of acres infested in each county.

For both surveys of 1981 and 1989, musk thistle and dyers woad had the largest acres. Musk thistle increased from 27,426 to 425,637 acres from 1981 to 1989, and dyers woad increased from 19,911 to 150,749 acres. Squarrose knapweed increased from 4,091 to 101,325 acres from 1981 to 1989 with average annual increase of 264%. The remaining seven weeds did not appear to increase as substantially as the ones cited above. (P. 96).

Kokdgehsoltan, B. B. (1988). Validation for a testing model of draft requirements in Utah. (MS thesis). Logan: Utah State University.

The purpose of this study was to validate a computer model previously developed for estimating draft requirement of typical agricultural implements in Utah.

The thesis of Mark Earl Rose was to develop a model for testing draft requirements using a Case two-bottom, 16-inch moldboard plow drawn by a John Deere 2640 tractor. Data analyzed included draft, RPM, and actual ground speed, with variables of soil texture, soil moisture,

percent clay, soil volumetric bulk density, and ground speed. Rose and others designed and constructed a hitch and drawbar attachment equipment for use with the system. Analysis revealed a R^2 - 27.7 for the plow [R^2 - (sum of squares explained by regression/total sum of squares before regression)].

The results obtained using the moldboard plow revealed some interesting points that should be of concern to farmers. The recorded data from Appendix Tables 5 through 22, and also graphs from Figure 3 through 8 in Appendixes A and B shows that, as the speed increases, the total draft increases; therefore, the highest draft would result from the highest speeds.

The previous model, as developed by Mark Earl Rose (1986) in Utah, was not applicable for every situation in this recent study. Therefore, the writer developed two different models (Equations 2 and 3) by the trial and error method for those plots which the previous model had not performed in calculating total draft and required horsepower for the system.

The models developed by the previous researcher, Mark Earl Rose, and by this recent study may not be applicable for every situation in other locations. However, farmers in areas having conditions similar to those found in North Farm (Logan, Utah), and soils properties approximately in the same range as this study, will be able to apply the findings of this study to their areas. If their variable values are much different than those of this study, the same format of regression equation should be used to develop a suitable equation for their particular field condition. (P. 64).

Marchant, L. K. (1989). Computerization of the Utah FFA record book and the State FFA Degree application. (MS Plan B Report). Logan: Utah State University.

Students enrolled in agriculture education need to keep pace with the changes in agriculture and technology by becoming computer literate through the use of the computer in record keeping.

At the beginning of this study, there was not a computerized FFA record book available for FFA members in the state of Utah.

Often students apply for several awards or scholarships. A copy of the Utah FFA record book explaining the student's SAEP should accompany each application, but under present conditions, students only have one copy of their records. Computerization of the Utah FFA record book would allow students to print and send an original copy of their record book with each award or scholarship. Computerization of the FFA record book will allow students to keep a typed copy of their record book up to date. In the event of accidental loss of the hard copy of the record book, students can simply print another copy of their record book.

The purpose of this project was to design spreadsheets on the computer that will allow students in secondary agricultural education to enter their FFA record book and the proposed State FFA Degree applications on the computer. These spreadsheets will allow students to

type the necessary information, make automatic calculations, and print each page of the Utah FFA record book and State FFA Degree application. This type of a program should greatly enhance the computer skills of students and teachers in secondary agricultural education.

Design computer spreadsheets on the AceCalc program that will allow FFA members to enter their records on the computer. Design computer spreadsheets on the Appleworks program that will allow FFA members to enter their records, and the State FFA Degree application on the computer.

Mohamed, E. I. (1989). Utah State University Extension activity in Somalia. (MS Plan B Report). Logan: Utah State University.

The organized agriculture extension service in Somalia, established in August 1980, has been operating in all 10 agriculturally potential regions of the country. The extension service project has proved beneficial to the farmers and has demonstrated the feasibility of making Somalia farmers adapt simple, low-cost technologies to increase their income.

However, understanding the extension project concept could be a problem for new staff member in the extension project. In order to meet the project objectives, the staff member should know the activity and progress reports provided by the project to farmers in previous years. Furthermore, it is important to know how experts from Utah State University were involved in resolving the farmers' problems in order to increase production.

The purpose of this report was to develop a slide tape video related to Utah State University extension activities in Somalia for the past five years. This film video will be used as instructional material for training new extension staff and farmers. By showing the visual report of extension activities, this project can contribute to experiences and information that would help the Extension Service and the Ministry of Agriculture staff.

As stated earlier, the purpose of the report is to develop a slide tape video that will express the type of involvement Utah Sate University has had in Somalia extension activities. To achieve this purpose, the following objectives were met: (1) Illustrate the type and scope of agriculture in Somalia. (2) Present a brief history of the development of the Somalia extension service. (3) Identify and demonstrate the role of Utah State University's assistance in the development of selected Somalia extension service projects. (4) Using formative evaluation procedures, five Somalia extension experts reviewed the video tape.

Parkinson, C. S. (1989). Influences of concurrent credit in Utah agricultural education. (MS thesis). Logan: Utah State University.

The purpose of this study was to identify the influence the Utah State University College of Agriculture concurrent credit program has had on students' attitudes toward agriculture and their intention to attend Utah State University in the College of Agriculture.

Four research questions were studied: (1) Why do students enroll in agriculture courses for concurrent credit? (2) How does concurrent credit influence a student's desire to enroll at Utah State University in the College of Agriculture? (3) How do concurrent credit courses influence a student's perception of agriculture? (4) How do concurrent credit courses influence student awareness of career opportunities in agriculture?

The target population for this study were high school students in the state of Utah in agricultural science and technology programs participating in the concurrent credit program. All schools that participated in the program were used in the sample. Each school was matched with another school that had not participated in the concurrent credit program on characteristics of school size, distance from Utah State University, and urban or rural setting.

A survey was utilized to evaluate the general attitudes of each student in the concurrent and nonconcurrent credit programs. A 100% return rate was obtained from the schools, with 398 student responses.

The dependent variable in the study was the attitudes of Utah high school students toward agriculture and intention to enroll at Utah State University in the College of Agriculture. The two levels of the independent variable were the availability or non-availability of concurrent credit in the high schools.

All respondents were grouped together for analysis and the concurrent and the non-current groups were compared using the Chi-square test of independence.

It was concluded that concurrent credit has an influence on a student's desire to enroll at Utah State University. Students expressed satisfaction with the concurrent program, and overall, the entire population rated the future of agriculture positively. (P. 94).

VIRGINIA

Burke, S. R. (1989). Accidents occurring in Virginia secondary agricultural mechanics programs. (Staff Study). Blacksburg: Virginia Polytechnic Institute and State University.

A descriptive study conducted among Virginia teachers of agriculture to determine the type of accidents, number of accidents, and nature and severity of injuries occurring in programs of agricultural mechanics. The results indicated that most accidents occurred because of objects striking against. The second leading cause of accidents was exposure to extreme temperature followed by being caught in, on, or between; struck by, and falls from the same level. There were 954 accidents reported for the 1987-88 school year by 159 study respondents who had accidents. Twenty-seven respondents reported no accidents during the period of the study. The results showed that 85.5 percent of the respondents had encountered one or more mechanics laboratory accident; the mean number of accidents per teacher was 5.1. Of the accidents reported 56 percent were categorized as minor, 39 percent as causing slight injury and 5 percent as causing severe injury. The nature of the five most severe injuries reported were: permanent damage caused by hand being caught under a belt sander, four fingers nearly severed by cut on a table saw, cut finger on table saw--stitches and skin graft required, glass in student's eye--scrap wood hit and fractured glasses, and face burned by manifold explosion.

The study concluded that: (1) the number of accidents occurring among study participants is high and the type of injuries occurring have potential for severe injuries to students, (2) safety instruction currently used by study participants is not as effective as it should be in preventing mechanics laboratory accidents, and (3) renewed emphasis on safety should be made at the in-service and pre-service levels.

Camp, W. G. & Echeverria, R. A. (1989). A national study of the supply and demand for teachers of vocational agriculture in 1988. (Staff Study). Blacksburg: Virginia Polytechnic Institute and State University.

This was the 24th annual national study of the supply and demand for teachers of vocational agriculture in the United States. The study is authorized each year by the Professional/Recruitment/Public Relations Committee of the Agricultural Education Division of the American Vocational Association.

The study is a population census of all heads of agricultural teacher education programs and state department of education head supervisors of agricultural education in the United States.

The most important conclusion was that there is an emerging and worsening shortage of newly qualified teachers of agriculture on a nationwide basis.

Camp, W. G. (1989). Participation in a study activities and achievement: A co-variance structures analysis. (Staff Study). Blacksburg: Virginia Polytechnic Institute and State University.

This study was a secondary analysis of the national High School and Beyond educational data base. It proposed a casual model to examine the effect of participation in student extra-curricular and intra-curricular activities on academic achievement. The LISREL VI statistical package was used to analyze the model.

Critics of "excessive" student non-class activities at the secondary level and advocates of such rules as "No-Pass, No-Participate" base much of their arguments on the thesis that time spent on student activities has a detrimental (presumably casual) effect on student achievement. The literature tends to imply the opposite relationship from numerous correlational studies. This study assumed that casual relationship to be valid and tested it using the most appropriate available national data set.

The major conclusion was that, after correcting for the appropriate exogenous and endogenous variables impacting on student achievement, there is still a direct and positive casual relationship between student participation and achievement. It recommends that policy-makers take another look at "No-Pass, No-Participate" rules in light of the detrimental effect that the rules may be having on student achievement.

Brown, R. G. (1988). The effect of scholarships on the recruitment and retention of the students in the College of Agriculture and Home Economics. Master of Science thesis, Washington State University, Pullman.

The main goal of the study was to provide information as to the effect of scholarships on the recruitment and retention of students in the College of Agriculture and Home Economics (CAHE) at Washington State University (WSU). Additional characteristics pertaining to student advising and college selection were examined to aid in future student planning. The specific objectives of the study were to:

1. Determine the effect of scholarships, awarded by the CAHE, on the recruitment of students in the CAHE.
2. Determine if scholarships, awarded by the CAHE, were the primary reasons students remained in the CAHE.
3. Determine what primary factors influenced students to attend WSU and enroll in the CAHE.
4. Determine the effect advisors have on the retention of students within the CAHE.

The survey population consisted of 127 students that had applied for scholarships from the CAHE prior to their freshmen year at WSU. The freshman classes represented were from school years 1985, 1986 and 1987. The students were given a questionnaire that provided questions pertaining to scholarships and their effectiveness as a recruiting and retention tool. Questions dealt with why they chose WSU and the CAHE and whether the students are still enrolled in the CAHE. One additional section dealt with student perception and advisors and the quality of advising. A total of 94 (74.0%) of the surveys were returned. The data were analyzed through the CMS system, using the SAS programs at Washington State University. Descriptive statistics were used to determine frequencies, means, percentages, and Chi-squares. Frequencies, percentages and Chi-squares were utilized for reporting, but no significant findings were found using Chi-square analysis. Data were reported in tabular and graphic formats.

Recommendations made were to establish larger scholarships that will retain students at a higher percentage. Establishing a means by which screening of individuals about their intentions toward obtaining a degree from the CAHE, prior to being awarded a scholarship from the CAHE was recommended. Suggestions were made to assess advising of students and that more advisor recognition be established as a means of reward for more effective advising. Recognition could be presented as a monetary stipend or as an award by his/her peers. Retention of students in the CAHE should be the goal of the staff and faculty of the College of Agriculture and Home Economics at Washington State University.

Dixon, L. D. (1988). Vocational agriculture shop safety: Perspectives of vocational agriculture teachers in Washington. Master of Science thesis, Washington State University, Pullman.

The purpose of this study was to collect and analyze information relating to vocational agriculture shop safety, including accident histories, frequencies of inspection, accident reporting procedures, teaching methods, and liability issues surrounding operation of a vocational agriculture shop in the state of Washington.

Literature was reviewed relating to safety. Emphasis was placed upon safety related to agricultural facilities. Data were based upon perceptions of vocational agriculture instructors. A survey was mailed to all vocational agriculture programs in Washington. A response rate of 67.3% was attained. Based upon survey results, teachers perceived the areas with power tools as the most hazardous. The data indicted a low accident rate for most programs. This would tend to indicate teachers are not neglecting safety training and the safe management of their facilities.

Most teachers perceive the need for new teaching materials as the most pressing problem. The need for more money for education was also a major concern of the teachers surveyed.

Heitstuman, M. D. (1989). Identification and retention of students in the College of Agriculture and Home Economics at Washington State University. Master of Science thesis, Washington State University, Pullman.

The primary purpose of the study was to identify characteristics pertaining to the retention of students in the College of Agriculture and Home Economics (CAHE) at Washington State University (WSU). The specific objectives of the study were to:

1. Determine the current status of 1984 freshmen who indicated an interest in majoring in either agriculture or home economics at Washington State University.
2. Develop a profile of the WSU CAHE student and determine the effect college lifestyle has upon academic retention.
3. Determine the effect advisors have on the retention of students within the CAHE.
4. Determine the effect high school background, including enrollment in selected vocational courses, has upon academic retention.

A mail survey was developed using the Total Design Method of mail survey research (Dillman, 1978). The survey population consisted of 169 entering freshmen in the fall of 1984 who declared an interest in majoring in the CAHE at WSU. A total of 108 of the surveys were returned for a return rate of 63.9%. The data were analyzed through the CMS system, using the SAS programs at WSU. The findings were analyzed using frequencies, percentages, and groupings. Chi-squares, correlations, and t-tests were used as tests of significance. Data were reported by figures, tables, and written explanation.

Respondents who took over 15 credits per semester had a significantly higher cumulative GPA than those who took 13-15 credits per semester. The 19 respondents who worked 1-10 hours per week had a significantly higher cumulative GPA than those who did not work, and those who worked over 10 hours per week. Chi-square analysis found a significant difference in the retention rates of individuals who did not participate in organizations, and those who participated in 1-2, and 3-6 organizations. It was recommended that greater emphasis be placed on the advising program within the CAHE, and that advisors take a more personal interest in their advisees.

WEST VIRGINIA

Legg, R. J. (1989). Factors influencing cooperation between county extension agents and secondary agriculture teachers in West Virginia. Master of Science thesis, West Virginia University, Morgantown.

The primary objectives of this study were to identify factors which influence cooperation between county extension agents and secondary agriculture teachers, and to determine relationships which exist between those factors and age, gender, and other characteristics of agents and teachers.

Data were collected via a mail questionnaire which was sent to the entire population of secondary teachers and extension agents in West Virginia. The questionnaire used was modeled after one administered in New York by Wood in 1979.

It was found that major factors exerting a positive influence on potential cooperation were "professionals of both agencies wanting to help the community to the fullest, regardless of where the credit goes," and "one agency offering its services to the other." Major negative influences were "lack of definite procedures for cooperatively planning and conducting programs," and "colleague seeking promotion." Negligible to low relationships were found to exist between perceptions of factors and demographic characteristics of agents and teachers.

Mpachika, E. D. (1989). Effectiveness of the training and visit system as perceived by contact farmers in Ngabu Agricultural Development Division in Malawi. Master of Science thesis, West Virginia University, Morgantown.

This study was designed to determine perceptions of contact farmers concerning effectiveness of the Training and Visit system of extension as a means of technology transfer, and to determine perceived influence of extension efforts on agricultural production.

A random sample of 120 contact farmers from the eleven extension planning areas of Ngabu Agricultural Development Division provided information for the study through personal interviews. Analysis of data included frequencies, means and analysis of variance.

Contact farmers agreed that there is close association between farmers and extension agents, that extension agents are technically competent, activities are available for farm women, information is provided in a timely and effective manner, and that farmers have changed their practices because of extension efforts. They also indicated strong belief that production has increased due to extension education efforts. Contact farmers did not feel that they were involved in extension program planning to any extent, and were somewhat dissatisfied with agents' use of teaching aids, conduct of demonstrations, and flow of information throughout a production cycle. It was found that most

agricultural information received by farmers is through group meetings, field visits, demonstrations, radio programs, and home visits.

Odell, K. S. & Grimes, R. G. (1989). Adult distance learning technology: ADLT. (Staff Study). West Virginia University, Morgantown.

This study was designed to use and evaluate new technology for the delivery of adult education in agriculture and to stimulate and foster working relationships between agriculture teachers and county extension agents.

Three adult education programs were planned by extension and agricultural education personnel and presented through satellite transmission. To provide information on program quality, audience perceptions, and knowledge gain associated with the programs, a formal evaluation was conducted at viewing sites across the state. Teachers and agents at presentation sites collected demographic information and pre and post program test scores from those participating (N=424) as well as their perceptions of educational programs offered via satellite transmission.

Findings indicate that participants did experience knowledge gains as a result of viewing and actively participating in programs presented. Most considered the method satisfactory and effective, and would attend if more programs were offered. Perhaps the most significant finding was that 26 percent of those participating had no previous affiliation with adult education programs in agriculture.

Pennington, R. R. (1989). Perceptions of state supervisors concerning adult education in vocational agriculture. Master of Science thesis, West Virginia University, Morgantown.

This study sought to determine perceptions of state supervisors concerning importance and quality of adult education as a component of vocational agriculture, how adult education is being encouraged by state departments of education, and factors that discourage teachers from conducting adult classes.

Data were collected from head state supervisors of agriculture in the United States through mail questionnaires. Data were analyzed through frequencies, means and analysis of variance.

Adult education in agriculture is considered essential by most state supervisors due to retraining needs of adults and because adult education is considered a component of 12 month employment. Factors which influenced a small number of state supervisors to consider adult education unimportant as a part of vocational agriculture were that adult education is not the primary mission of vocational agriculture and lack of funding for adult programs. Although adult education is encouraged through state funding for materials, mileage, and equipment and pay incentives, programs are not perceived to be of high quality. Major factors which were perceived to discourage adult offerings were

time restraints, teacher load, lack of local and state support, and lack of confidence in teaching adults.

Smith, S. D. (1988). Major problems encountered in administrating/supervising vocational agriculture as perceived by state vocational agriculture supervisors. Master of Science thesis, West Virginia University, Morgantown.

Objectives of this study were to identify major problems supervisors of vocational agriculture are currently encountering in administrating state programs of vocational agriculture, and to determine the influence of selected demographics on problems identified.

Head state supervisors in the 50 states were asked to identify major problems being encountered in administrating state programs. Perceptions of all supervisors were then rated by the population to form a consensus of opinion. Means, standard deviations and analysis of variance were used in data analysis.

Of the 92 statements rated by participants, 13 were considered as moderate or severe problems. Rated most severe was the lack of employment data in agriculture and agribusiness. Other major problems related to difficulties in dealing with increased high school graduation and college entrance requirements, image of agriculture and vocational education, lack of adult education in local programs, and a decrease in state and federal funding support for vocational programs. Southern region supervisors expressed greater concern than did others for the number of disadvantaged and handicapped students mainstreamed into agriculture programs, loss of control to local systems, and employment and retention of qualified state staff. Considered less serious by supervisors from the western region than by others were problems concerned with decline in student population, lack of quality teachers, and expansion of 'agriculture in the classroom' in elementary schools. It was found that demographic characteristics had little influence on ratings of problems.

WISCONSIN

Erdmann, Terrance G. (1989). An assessment of Wisconsin high school agricultural instructors' perceptions of the selected changes in the National FFA Constitution. Master of Science thesis, University of Wisconsin-River Falls, River Falls.

The purpose for this study was to assess the perceptions of the Wisconsin high school agricultural instructors to the changes in the National FFA Constitution.

The population studied consisted of Wisconsin FFA advisors that were registered at the 1989 Wisconsin State FFA Convention in Green Lake, Wisconsin. Two hundred thirty-nine FFA advisors received the cover letter and survey with their convention registration packets. A total of 93 surveys were returned and made up the representative sample studied. A five point Likert scale was used to obtain data on the perceptions of the agricultural instructors.

Major findings of the study indicated that the majority of the Wisconsin FFA advisors "agree" or "strongly agree" to the changing of the FFA Emblem by deleting the words "vocational agriculture" and adding "agricultural education," the changing of the name of the organization from the "Future Farmers of America" to the National FFA Organization," the deletion of the word "farmer" from all honorary and active membership degrees and inserting the word "FFA," and the changing, in all instances of the National FFA Constitution, the words "vocational agriculture" to "agricultural education."

From the data, it was found that the number of students that are enrolled in the high school is a "good" indicator of the perceptions the agricultural instructor has toward the National FFA constitutional changes. Conversely, the data also revealed that the total years of public school agricultural teaching experience for the instructor, the level of education for the instructor, the percentage of non-farm students, and the number of students enrolled in the agricultural instructor's program, are "not good" indicators of assessing the perceptions to the selected National FFA constitutional changes.

Overall, the data revealed that the Wisconsin high school agricultural instructors "agree" with the selected changes to the National FFA Constitution.

CITATIONS

Research and Development Activities in Progress

GEORGIA

Fort Valley State College, Fort Valley

Borne, C. J., Rawls, W. J. Standards for quality agricultural education programs. (Staff Study). Fort Valley: Fort Valley State College.

Rawls, W. J. Job satisfaction of Fort Valley State College agricultural program graduates. (Staff Study). Fort Valley: Fort Valley State College.

Rawls, W. J. Employees perceptions of Fort Valley State College agricultural program graduates. (Staff Study). Fort Valley: Fort Valley State College.

The University of Georgia, Athens

Avery, E. Skills needed for entry level employment by farm equipment mechanics. Ed.S. applied project, The University of Georgia, Athens.

Byrd, S. Characteristics of the turf industry in the year 2000, with implications for agricultural education. Ed.S. applied project, The University of Georgia, Athens.

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